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# FIRE ENGINEERING

*The Journal of the Fire Protection Profession Since 1877*

Vol. 88, No. 1 JANUARY, 1935 Member A.B.C.—A.B.P.

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View of the Kerns Hotel at Lansing, Mich., Taken While the Fire Was at Its Height. Many of the Hotel Guests Lost Their Lives When They Leaped into the River at the Rear of the Hotel

# You Learn A Great Deal About Pumps in 62 Years

500 G.P.M.
from Suction
and at Speeds Acceptable to National Board
Barton ratings are all based on pumping from suction, with all tests made under conditions acceptable to National Board of Fire Underwriters. To rate fire pumps otherwise is misleading. For instance, the Barton Pump shown at left will deliver 500 g.p.m. when pumping from suction, but when operating from hydrant it will deliver far beyond this rated capacity, in fact out-deliver any other front mounted centrifugal fire pump.
A Barton Pump can be used on practically any chassis, and there are various sizes to meet all requirements.
In the Front Mounted Class · · ·
Only BARTON PUMPS
MEET UNDERWRITERS' TESTS

BARTON Centrifugal Fire Pumps are built to stand the hardest kind of service year in and year out. All bearings and gears are much heavier than used in ANY truck transmission. The impeller is bronze; the shaft of stainless steel. The automatic primer is simple, sure-fire; it won't fail you even in sub-zero weather.

***BEWARE of Cheap Imitations***

When you buy a fire pump, too much is at stake to try any foolish experiments. Don't be stampeded by extravagant claims and bargain prices.

We have been manufacturing Barton Pumps for over ten years, and when we started making Bartons we had already more than fifty years of general pump building experience behind us.

This long experience counts. Don't think that it doesn't! You can't perfect a product over night. It takes time to make sure of quality; to get all of the "bugs" out. Another thing, both Barton front end drive and Barton primer are fully protected by patent coverage. For years to come no company but this Company can offer you Barton time-tested, proven performance.

***FIELD REPRESENTATIVES to Help You***

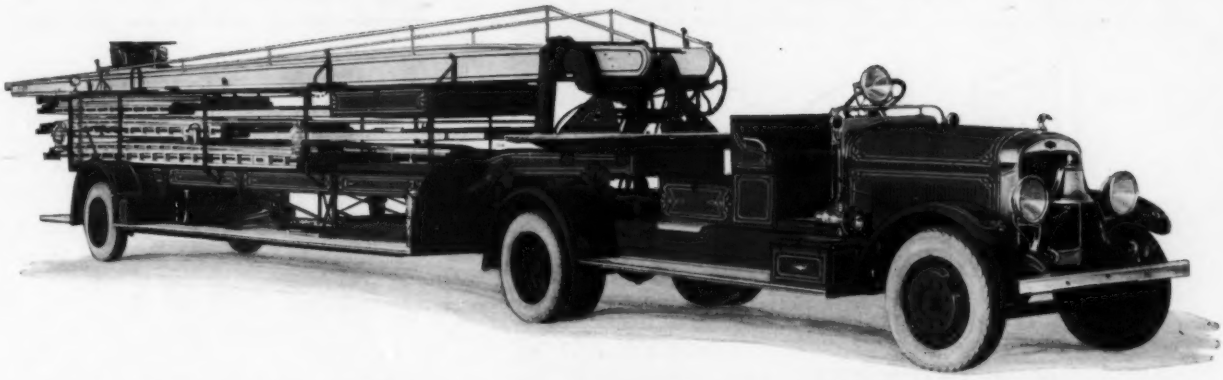
One more point of first importance: Barton Pumps are sold by factory representatives. There is a Barton man near you. If, after you purchase a Barton Pump, there is any question concerning performance or operating details he will be on hand immediately to help you. We keep in close touch with Barton customers and guarantee satisfaction.

Write for our Bulletin 75, which completely describes the entire line of Barton Pumps suitable for village, small town and city requirements.

AMERICAN STEAM PUMP COMPANY, Battle Creek, Michigan.

# *The* PIRSCH *With Complete One Man Control* (Patented)

## HYDRO-MECHANICAL AERIAL LADDER TRUCK



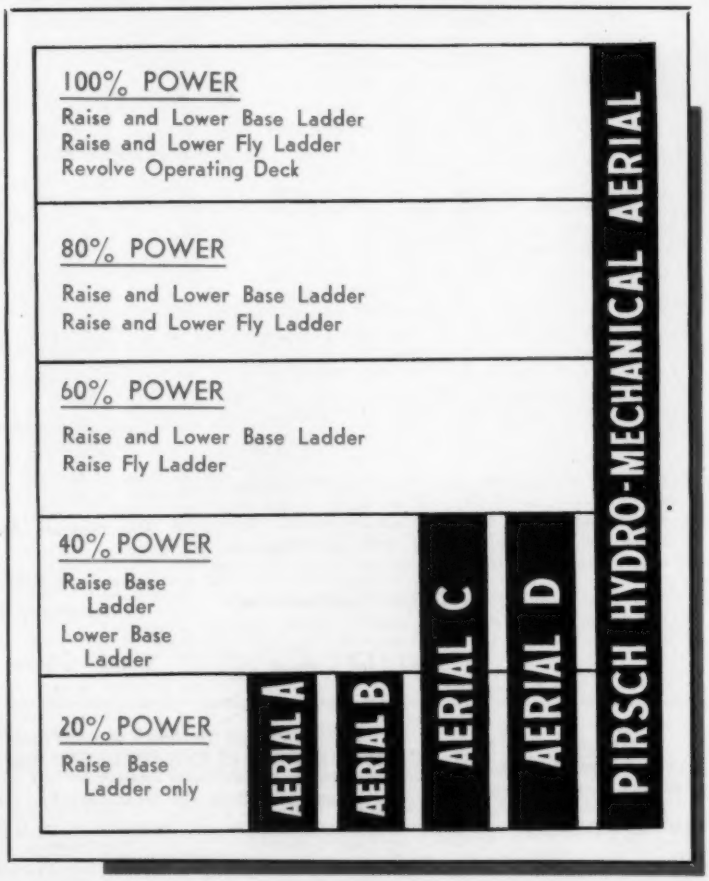
## YOU CANNOT AFFORD TO OVERLOOK THIS COMPARISON WHEN YOU PURCHASE AN AERIAL LADDER TRUCK!

The chart shows →

comparative efficiency of the Pirsch Hydro-Mechanical Aerial Ladder Truck as compared with four other well known makes. Note that the Pirsch Aerial is the only 100% *All Powered* Job.

A piece of equipment costing many thousand dollars and built to last from fifteen to twenty years or more should be modern and up-to-date—at least when it is bought. If it is obsolete when purchased, what will it be fifteen years hence?

Efforts will be made to follow our lead—but Pirsch originated, pioneered, and developed the idea.

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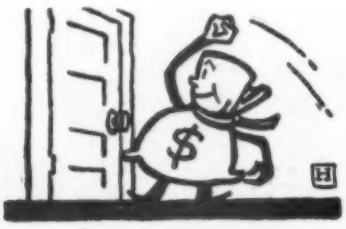
# FIRE ENGINEERING

*The Journal of the Fire Protection Profession Since 1877*

R. H. LOCKWOOD, Associate Editor — FRED SHEPPERD, Editor — N. N. WOLPERT, Assistant Editor



## Opportunity is Knocking

● "No branch of the securities business has experienced greater changes within the past year than the municipal bond field," states Frank H. Morse, of Lehman Brothers, well-known investment bankers of New York. "The financial recovery of cities throughout the country has been accompanied by a swing in the prices of many municipal bonds from the lowest to the highest levels in their history."

"In the early months of the year only municipal securities of the highest grade were salable at any price and there was literally no market for second or third grade municipals," Mr. Morse remarks. "In the latter part of 1934 some of the high grade municipals were selling above United States government securities, while certain second and third grade bonds had recovered from 50 cents on the dollar to around par. Municipalities with unimpaired credit standing were able to borrow at record low interest rates."

● All of which means that cities and towns everywhere ought to be in position soon to get the wherewithal to buy badly needed equipment. And there are indications that it won't be long now before the rush starts.

● It's a grand opportunity for everybody—let's make the most of it!

The Publishers

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*WE EMPLOY NO SUBSCRIPTION SOLICITORS*

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# The Champion Fire Pump in Action

It is fair to say that in the building of the Champion, nothing is left undone which will in any way contribute to its excellence. If the Champion pump is a veritable masterpiece of engineering practice, it is so because the high principles set for its building, include Floating Power, Ball Bearings, Friction Cultch, Bronze Volute Impeller, Safety Primer, etc.

### *The Champion Front Mounted Fire Pump Is Easily Identified—IT HAS NO GEARS*

It is hard to believe that on DIRECT DRIVE from the crank shaft this new model Champion will pump 500 GALLONS or 650 GALLONS PER MINUTE if the hydrant has a good service connection, or lift from suction 500 gallons, or more, per minute. Water enough at HIGH PRESSURE for 2 to 3 heavy fire hose streams.

If you want COMPLETE SECURITY, accept only a DIRECT DRIVE pump; it may cost you more but it's a sound investment for the future. You'll never know the regret of hastily (and who isn't in haste at a fire) letting in the clutch and having the pump completely wrecked almost instantly or the motor crankshaft twisted and ruined beyond repair.

The Champion is the kind of centrifugal Pump that will handle sandy or dirty water without injury. Takes water from any source, hydrants, lakes, streams, cisterns, ditches or booster tanks.

**PUMPING FROM SUCTION.** When taking water from farm cisterns, ponds, or lakes, there is no fear of sandy or muddy water injuring this pump. A handful of grit that would utterly ruin other pumps has no effect on the Champion.

In fighting rural fires this fact is most important to remember because with a Champion any kind of water can be used without hesitation, even salt sea water. With only ONE moving part, the Impeller, it can't be damaged by water of any kind.

**FAST CONNECTIONS.** Suction hose and discharge hose connections are quickly and easily made. Each Champion is provided with two suction inlets and two discharge outlets, both outlets are valved.

**LIGHT IN WEIGHT.** So light that the pump itself weighs only about 125 lbs. or about 175 lbs. including the mounting brackets and attachments. For this reason it accommodates itself to any standard 1½ ton chassis. So light that you get all the speed there is in any job, 40 to 80 miles per hour. When in place the clearance between pump and ground is greater than that of front axle. Champion Pumps are mounted so that the bumper protects the pump.

Any talk, advertising, or pictures cannot bring out the power, compactness, and the neatness and the real features of a Champion Front Pump. You have only to test a Champion to appreciate what it can accomplish.

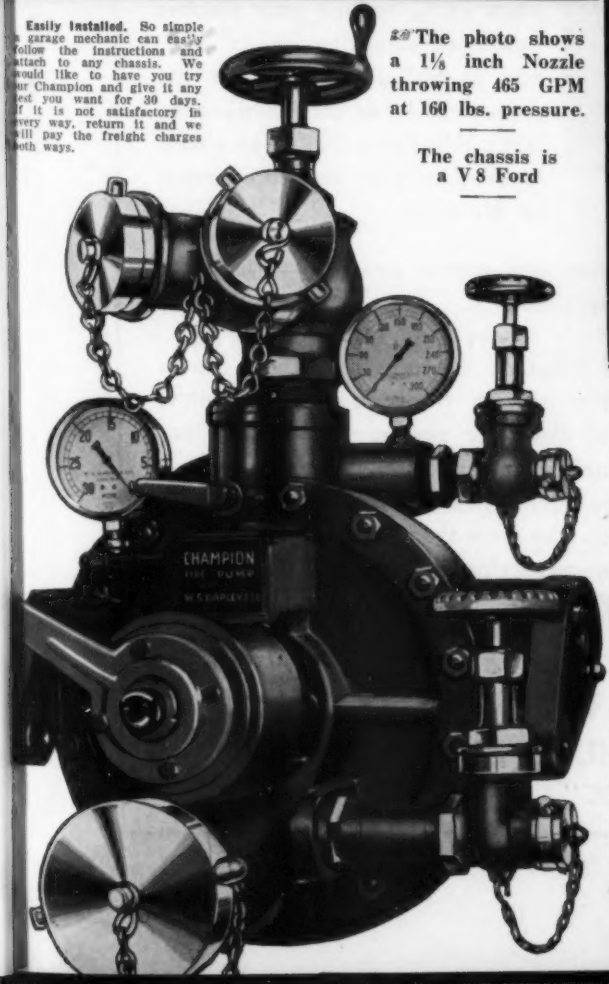
**THE BUYER'S PROTECTION.** The policy of Darley is that every Champion user must be a satisfied user. If we ever learn that one of our Champion Fire Pumps is not giving complete satisfaction, we will make every effort to get that pump back because we would sooner have the pump than keep the money.

# Amazing is Right

**Easily installed.** So simple a garage mechanic can easily follow the instructions and attach to any chassis. We would like to have you try our Champion and give it any test you want for 30 days. If it is not satisfactory in every way, return it and we will pay the freight charges both ways.

**The photo shows a 1⅛ inch Nozzle throwing 465 GPM at 160 lbs. pressure.**

**The chassis is a V8 Ford**




HEIGHT OF STREAM 195 FEET

**WAR ON FIRE!** At every fire the Chief must plan his attack, just as a General a the front orders men and equipment into the battle. Not only th burning building but adjoining property must be watched or the blaze will spread!

To fight and subdue fire a Fire Chief must have water, pressure and hose lines as well a trained men. The fight must be waged on front and flanks; leader line streams carried int the building while heavy hose lines play on roofs or crash through windows and wet dow surroundings.

With a mighty Champion Pump the Chief has first his booster tank water for the skirmis and then two heavy 2½ inch lines siamesed from the pump, and a 1½ inch line from the booste outlet, after the booster tank has been emptied. Or, he can lay one 2½ inch line from the pum siamese with the other 2½ inch line siamesed into two 1½ inch lines and still have his 1½ inc booster line 4 powerful streams throwing 650 gallons a minute at high pressures.

Think it over—MORE THAN 2½ TONS OF WATER EVERY MINUTE IS EASY FOR A CHAMPION.

## Champion Type F5 Only $339.20

***RATED CAPACITY 650 GALLONS PER MINUTE***

As illustrated, price includes Shut-Off Valve on outlet with 2½ inch capped brass Siamese. This type is also equipped with 1½ inch Valve on Booster outlet and 1½ inch Valve on Booster inlet line. A Vacuum Gauge is mounted as shown, together with a 300 lb. Pressure Gauge, Automatic Primer, Friction Disc Clutch, Splined Drive Shaft of Chromium Nickel Steel, and Chassis Brackets for mounting. Drain cock. Everything needed to make a complete installation. With each pump we furnish Easy Blue Prints and easy Instructions for mounting.

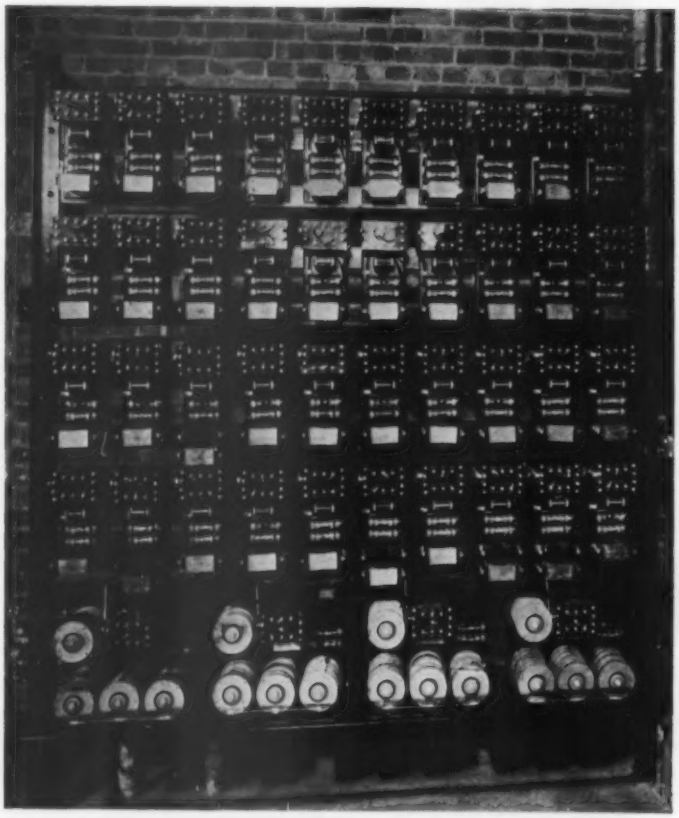
**Type F5.** Champion Fire Pump, complete..... **$339.20**

# W. S. DARLEY & Co.

2810 WASHINGTON BLVD. CHICAGO, ILL.

# GAMEWELL RECTIFIER-FLOATING-BATTERY

## Cuts Maintenance Costs in Halves and Gives You A More Efficient Current Supply



FOR MEDIUM SIZE CITY
TYPICAL GAMEWELL RECTIFIER INSTALLATION

It isn't often that you can cut operating costs greatly and at the same time increase the efficiency of your fire alarm system. But, that's just what you can do with a Rectifier-Floating-Battery Installation designed, engineered and installed by Gamewell.

A Gamewell rectifier installation will cut your battery replacement costs 75%, reduce your electric power consumption on an average of 50%, and also cut the amount of labor for maintenance 50%. What Fire Chief can afford to overlook such an improvement for his city?

Gamewell has pioneered in designing a rectifier for fire alarm service. But, it takes more than the rectifier to give you the real results . . . each installation must be properly engineered to fit your own individual system. Gamewell is not simply interested in selling you rectifiers . . . we have our reputation for fine fire alarm systems at stake. Naturally, we want you to have a well engineered job, properly installed to give you the full benefits of a rectifier-floating-battery installation and assure you of unfailing fire alarm service.

Several thousand Gamewell rectifiers are in fire alarm service throughout this country, many of them for several years. Our rectifier-floating-battery installations will improve your fire alarm system, large or small. Let us show you why more than 90% of the rectifiers in fire alarm service in this country are Gamewell. Write for more complete details.

## THE GAMEWELL COMPANY

**NEWTON, MASSACHUSETTS**

*"A BOX A BLOCK"*

# FIRE ENGINEERING

The Journal of the Fire Protection Profession

Volume 88 JANUARY, 1935 Number 1

## With the Editor

**Hazardous Economy**

Many cities today are having plenty of trouble from bursting fire hose. In some instances it can be traced direct to the policy of purchasing "bargain" hose—hose that is built to sell at low prices. In other cases the trouble is the result of expecting too much service from the hose.

A typical example is the experience of a large mid-western city. The leading daily newspaper in that city sizes up the situation very clearly in the following paragraphs, which it printed recently:

"Bursting of rotton fire hose nearly caused firemen to lose control of a blaze which swept the Barrett Company's tar products plant last night.

"Had this happened, tragic loss of life might have occurred; property damage doubtless would have been staggering.

"The condition of much of the equipment with which the fire department is called on to protect the lives and property of ..... citizens is disgraceful.

"Chief ..... warns that the decay of fire equipment has reached the point where he can no longer be responsible for what happens. Not only is property imperiled, but firemen constantly are being sent into spots where their lives become endangered if the water supply fails."

It is unfortunate that those who know least about a subject are among the first to express their views about it, and further, are the most persistent in trying to force their views on others. However, this condition explains why city officials new on the job and knowing nothing of fire apparatus and equipment are so quick to suggest economy schemes that might be destined to prove disastrous.

Fire Chiefs today fully realize that in fire hose, especially, you get just what you pay for. "Bargain" hose is usually the most expensive in the long run, to say nothing of the hazards it introduces into fire department operation. Of all items of fire department equipment, fire hose should be bought on the basis of quality alone, and price should be but a minor consideration. To build quality into hose costs money. Usually, the cheaper the hose, the lower the quality, and, consequently, the greater the danger of its bursting in an emergency.

Fred Shepperd

# Increasing Volunteer Efficiency

The efficient volunteer Fire Department should have regular drills and meetings, frequent inspections to familiarize the men with their districts, and promote fire prevention, hearty cooperation with neighboring Fire Departments, and respect for and cooperation with the Chief of the department, with perfect discipline in the ranks.

By CHIEF H. G. PAINTER,
Fire Department,
Kent, Ohio

Chief H. G. Painter

THERE is no reason why smaller cities and towns cannot have just as efficient inspections, preventive measures and service as those of our larger municipalities, if the Chief and his Fire Department have the welfare of their community at heart. The Chief should find time to institute frequent inspections, so as to keep the town a clean and safe place and prevent fire losses and hazards in the community. The Chief can prepare articles for the newspapers. He can appear before local organizations in talks on fire prevention, hazards, and in an endeavor to sell the Fire Department and its services. He can explain to his public the dangers of gasoline, kerosene, matches, pyrolin paints, bonfires, electricity, and so on, and he can explain what to do in case of fire.

Time works slowly. Sometimes we feel discouraged and wonder how to stir interest among the public in fire prevention. This was my stickler. During Fire Prevention Week of 1933, I put the usual questionnaires into the schools, with the "Stamp Out Fire" cards for the first, second and third grades. After much patient waiting and several trips to the schools, I gathered in all of these questionnaires from six different schools. I read them over and, believe me, I never knew a city so free from hazards and so well protected!

### Series of Articles in Local Papers

It was too good to be true! I read between the lines: the public thought there was a catch. I did not dare undeceive them or hurt their feelings. Out came the old pencil and paper, reference books, and so on. For three or four evenings I worked and wound up with twenty-two pages of answers to the questionnaire. This was, however, too much for publication in one issue of the papers, so I split it up into fifteen articles, headed, "Do you know?" "Do You Remember?" "Are You Careless?" and so on. These I took to the local papers. They gladly published the articles and they went over good. People had been afraid to admit the truth of conditions as they were, but, since the publication of the articles, I have had compliments from many sources, and many have admitted the truth contained in them.

### Reaching the Youngsters Through the Schools

The teachers in the schools read the articles in answer to their questionnaire, to the pupils. Since that time, they bring classes to the fire house, and the driver or myself or both get the children to ask all the questions they want to and we answer them seriously. No foolishness is allowed except at the sliding pole, for this takes each pupil's eye. We try to put across to these youngsters the dangers connected with fire, give them many "do's" and "don'ts" and explain simply the workings of the Fire Department. They go back to their classes and write essays on the trip, explaining just what they have actually learned. These simple essays often make very interesting reading; they are educational both to the scholars and ourselves. It is wise to educate the children of today, for they are the grown-ups of tomorrow!

### Train the Men Through Meetings and Drills

To have an efficient Fire Department, there should be regular meetings and drills, made interesting and instructive by good speakers, expert first aid men and firemen from larger cities nearby, who can explain their methods. It is an advantage for the Chief, his officers and in fact, the firemen also, in their travels about the country, to visit other fire houses and talk shop with the firemen they meet there, exchanging ideas, and above all, keeping eyes and ears open for new ideas and suggestions. Fire magazines and fire literature should be read and studied, with the best books on the subject. Read what the Chief of your neighboring city has to say, invite him over, have him give you information first hand, get acquainted with him. Form county fire organizations, hold meetings, with speeches and demonstrations, and a general get together.

### Reduction of Water Damage

It is important to cut down water damage and water loss at fires. If the city pressure is great enough, or a pumper is in use, it is wise to purchase a 2½-inch siamese connection, with a three-way one-inch connection for one side and some one-inch hose. Lay a line of 2½-inch hose from hydrant to pumper and a 2½-inch line to the fire from the pumper. While you are making this lay, send a man in with the booster line to start work at once. Cut the siamese in at the fire and take three one-inch lines to work with, if the blaze is of small proportions.

A case in point was a recent fire in a seven room residence, caused by a bolt of lightning. Half the basement was a roaring furnace, the cold air duct had collapsed, and flame was rolling into the dining room and parlor.

It was so hot that the entire first floor had to be refurnished, with the lace curtains destroyed and the windows cracked. We used the one-inch layout on this fire and here is the answer:

*Mr. Holly G. Painter, Fire Chief, Kent, Ohio.*

DEAR MR. PAINTER: This is to thank you for the fine way in which the recent fire at my residence was handled. This fire. which started in my absence, had every opportunity to assume serious proportion. Due to the efficient work of the Kent firemen, I am happy to say, flames were extinguished with a minimum of loss.

It is a pleasure to tell you that there were no articles missing from the house after the fire was over.

You have every reason to be proud of your department and the way in which they function. It is a real service to the people of Kent.

Again thanking you, I remain

Sincerely yours,

M. W. STAPLES.

### Careful Picking of Men Essential

Every Chief can win similar praise for his department, if he will educate his men, lead them and work with them. In turn he must pick intelligent, hard working, clear thinking men, who will follow him through.

In case the weather is too bad for outdoor practice, the Chief can fall back upon blackboard chalk talks, practice the men in resuscitation, the tying of rope knots, the laying of dry hose on the floor of the fire house, and other useful information. It is well, occasionally, to put an under officer in charge for an evening, to show what he knows. Let him carry out the drill, or turn it over to one of his men. This will show the Chief what qualifications his men have, and will bring out a wide range of ideas. He can then pick out the best, and this plan will be found of great benefit.

### The Chief Should be a Leader

Above all, the Chief should be a man among men—a leader and work with and for his men. He should use discipline where necessary, but be fair to one and all and show no partiality.

Dances and parties for the members, with an occasional chicken or hot dish supper, is a great help to sociability. A family spirit should be encouraged among the group; this creates a better spirit of cooperation. There must be some fun mixed in to round out this picture.

Finally, let's all work for a better and more concentrated effort for Fire Prevention!

## UNUSUALLY LOW FIRE LOSS REPORTED AT WORLD'S FAIR

**During Two Years' Operation of Fair, 177 Alarms Were Transmitted With a Fire Loss for the Term Aggregating $2,500**

THE Century of Progress, Chicago, has closed its gates after two years' operation, but it has left a fire loss record which proves that the fire prevention and fire fighting features of the fair were well planned and regulated.

Summarized in a recent communication from the Chicago Board of Underwriters, the figures show that 177 alarms of fire were recorded in the two years of operation, aggregating in an estimated loss of about $2,500. Not included in this total is the damage to a spectroscope machine which caught fire in the General Motors Building in June, 1933, in which case the outbreak was confined to its point of origin with no damage to the building. The alarm in this instance was transmitted automatically and the Century of Progress Fire Department was on the way three minutes before a manual box was pulled by an eye witness to the blaze!

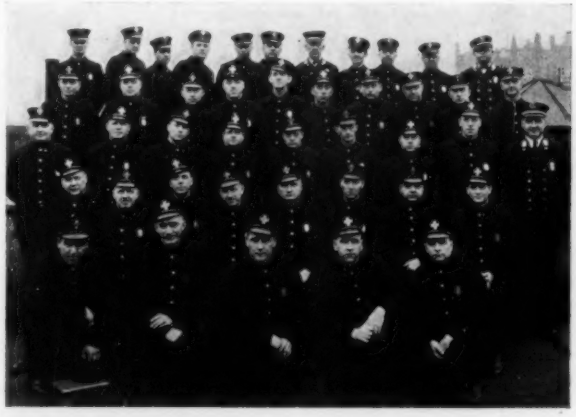
Approximately eighty per cent of the loss figure reported was accounted for by a single fire: that in the Ford Industrial Barn on August 9, 1934. Caused by sparks from a workman's blowtorch and fed by quantities of soy bean oil, the outbreak was nevertheless brought quickly under control by the fair's own department supported by several Chicago companies. The bulk of the damage comprised "sentimental values" and machinery. In this case also, the alarm was transmitted automatically by the Aero system.

The good judgment of the authorities in placing Chief J. C. McDonnell in charge of the private fire brigade was more than confirmed by the performance of the force in the numerous emergencies which arose. Chief McDonnell, widely known as the father of Chicago's Fire Prevention Bureau which he organized in 1912 as a First Deputy Chief, had full play for his preventive skill as well as for his ability in the extinguishment field. His establishment of every human precaution, backed by rigid inspections, minimized the risk to the lowest possible limit, and his intelligent organization and training never failed when emergencies did arise.

In keeping with the spirit of the Century of Progress, the Fire Department was kept in close touch with conditions by an elaborate telegraph system in which automatic devices were important. The entire 425 acres of grounds were covered by a network of A. D. T. services including 250 Aero automatic alarm circuits and 240 watchman's compulsory tour stations and manual fire alarm boxes. An ADT squad car and crew were maintained on the grounds, and all signals were cleared through the LaSalle Street central station to the municipal fire and police departments as well as to the exposition's private forces. All of the important buildings were covered by Aero and in several instances—notably in the case of an outbreak in the Agricultural Building last July—the system proved so speedy in operation that Chief McDonnell's men were on the scene and at work even before any manual box was pulled. In other cases the Aero signal was received anywhere from a minute to three minutes ahead of the manual alarm. With the single exception of a concession stand which was unprotected, every building fire was under control within three minutes after the alarm was sounded.

## French Theatre Fire Causes Panic

Fifty-four persons were seriously burned in a small motion picture theatre fire in the village of St. Gauderic, France. The film took fire, and a panic resulted. Fire spread from the operator's room to the rest of the building. Due to the difficulty of reaching the exits in the dark, many were badly burned.



**Students and Instructors of the Boston Fire College**

The fall and winter term of the Boston, Mass., Fire College, conducted by the Boston Fire Department, opened on December 3 with an introductory address on "The Administration and Object of the College" by Chief Henry A. Fox and a talk on "Morale, Discipline, and Military Tactics" by District Chief Charles A. Donohoe. There are forty privates from the Boston department and two lieutenants from the Malden Fire Department taking the course. Captain John J. Crehan, department drill master, is in general charge.

HARRY BELKNAP

# Protecting Children in School

Committee appointed by Mayor of Chicago to inspect local schools, makes a number of suggestions which may be followed with much benefit by other cities to guard school children from the dangers of fires while in school.

INSPECTION of the Chicago public schools was made by a special committee appointed by the Mayor, consisting of representatives of the Chicago Fire Department, Building Department and Board of Education. More than four hundred school buildings were examined, varying in construction from portable frame structures to those of a large and permanent nature.

The basis of the inspections was first to study the safety of occupants, second, the protection of property, and third, technical compliance with the city code.

Following is an excerpt of the findings and the recommendations that were made:

The fire signals are not uniform. The drills have become such a routine matter that the realization of their importance has been lost. It is our conclusion that a standard fire drill can and should be adopted by the Board of Education, and the principals be required to adhere strictly to the same. To accomplish this, we suggest a fire gong to be used for fire drills ONLY, and that uniform signals be used.

This can be accomplished by numbering the exits; thus buildings extending north and south could be numbered commencing with the north exit and continuing consecutively around the front of building to south exit. Buildings extending east and west to be numbered likewise, commencing at the east exit. Buildings with more than one frontage could be numbered consecutively from north or east exit, as the case may be.

The following signals are suggested:
3 strokes of gong; All exits open.
3 strokes of gong 1: No. 1 exit closed.
3 strokes of gong 2: No. 2 exit closed.
Alarm to be repeated ten second later.

### Position and Duties of Teachers

At the sounding of the fire alarm, the teacher shall assemble class, search the room and dressing room, close the door, assume position at head of class before reaching stairway, and supervise class while out of building, keeping exits clear.

No one is exempt from fire drill. This includes doctors, nurses, visitors and various attendants.

No person to re-enter building until a return signal is given. Return bell is not to be given until the principal is assured that buildings are vacated.

Engineer's duties: Shut-down all ventilating fans, open city fire box, and report its condition if not in order.

Each crippled and disabled pupil shall be assisted by boys of higher grades or someone especially assigned to this duty.

Pupils or persons not in class-rooms at time alarm is sounded shall leave the building immediately by the most direct route (avoiding the closed exit).

Full width of stairs to be utilized by pupils, who shall clasp hands and keep step, thereby facilitating the movement without unnecessary hurry.

Every drill shall contemplate one exit closed. All fire escapes are to be used in each drill except in inclement weather.

The word "Exit" herein used is not confined to the doors at grade but includes the entire stairway from top to bottom.

Fire Signals are to be stenciled on the wall of each class-room, facing the class; also in each corridor at fire gong in block letters, one inch high.

All teachers to be instructed and practiced in sounding fire alarm.

An accurate written report is to be made of each drill to proper authority. Drills are subject to authorized inspection without warning and results reported to the Board of Education for comparison with principal's report.

In inclement weather when wraps are necessary, a signal can be arranged on the dismissal bell, followed, after interval, by the fire alarm.

### Protection of Property

Under this heading we call to your attention the storage of combustible material in the various chambers connected with the ventilating system. In many instances this results from the lack of proper storage rooms, and in others mere carelessness.

We recommend centralized storage in incombustible rooms, and where such are not at present available they shall be provided at once. Such rooms to have no connection with the ventilating system.

We found numerous closets under wooden stairways with combustible material stored therein; such closets have been ordered removed and metal lath and plaster applied underneath the stairs.

Where we found manual training rooms connecting with the ventilating system, all doors and windows (where practical) have been ordered bricked up, all others metal covered.

It is recommended that in the future no manual training or storage rooms to be located adjacent to the ventilating system where communicating openings exist.

From one quart to fifty gallons of highly inflammable liquids and dangerous chemicals, such as hydrochloric, sulphuric, nitric acids, benzine, gasoline, yellow phosphorus, carbide, potassium metals, etc., are now being stored in wooden lockers and under stairs of various schools.

It is recommended that this condition be eliminated and a proper fireproof storage space be provided outside of the main building. One day's supply to be allowed in the shops and laboratories.

The storage of paints, oils and varnish in large quantities for redecorating should not be permitted in any main building while school is in session, but should be stored in coal room.

All screens used for stage settings to be covered with the asbestos material submitted to and approved by the Chief of Fire Prevention and Building Commissioner. All curtains and other stage paraphernalia to be flame-proofed annually. No curtain or drape to obscure any exit.

Remove a sufficient number of fixed seats from front of auditorium to provide seating space for orchestra, enclose said space with metal rail, maintaining legal aisle space between railing and first row of seats.

The practice of using moving picture machines outside of the motion picture booth should be discontinued, unless safety film is used. The motion picture booth to be equipped with a liquid chemical extinguisher, metal shutters to be properly fused, and a self-closing door. All tables and exposed wood surfaces inside of booth to be protected with metal.

An official capacity sign should be displayed in every assembly hall and the occupancy limited to this capacity on every occasion.

Assembly halls above the second floor in ordinary constructed buildings should be discontinued as soon as possible.

### Technical Compliance With the City Code

We find many class-rooms crowded and aisles obstructed with loose furniture, plants, statuary and musical instruments.

We deem this a very hazardous condition and recommend that all loose furniture and obstructions to aisles be removed, all seating arrangements to be fastened to the floor, allowing the legal aisle space and the teacher's equipment be limited to a minimum prescribed by the Board of Education.

Discontinue the practice of storing combustible material,

in the upper section of dressing rooms in buildings of the later type where sliding blackboards are used.

All frame and wall board partitions have been ordered removed and we recommend that all future partitions conform to the original construction of the building.

Connecting buildings of different types of construction should be separated with automatic fire doors on all floors and in basement.

Discontinue all seated basement class-rooms where ceiling is less than twelve feet high and floor is more than two feet below grade.

In a number of instances we found locked doors between corridors and class-rooms having access to fire escape during school session. In two instances this occurred in buildings of ordinary construction with only one stairway.

We, therefore, recommend that any door existing between corridor and fire escape exit to be equipped with a full length glass panel.

### Conclusion

We have stressed the importance of fire drills because we believe it not only protects the school children while in school but it is building future citizens whose influence in time of panic would be invaluable.

Approximately four hundred schools and four hundred thousand children are under the control of the Board of Education. It would seem advisable that the task of perfecting fire drills and propagating the principles of "Fire Prevention" and "Safety First" devolve upon some centralized authority, vested in one person or a committee, whose duty it will be to place the Public Schools of Chicago ahead of any in the country in regard to safety.

## Chief Fox Speaks at Concord, N. H.

Chief Henry A. Fox, of the Boston Fire Department, gave an interesting talk on "Ventilation At Fires" on December 12 at the meeting of the Fire Chiefs' Club of New Hampshire held at Concord, N. H.

Chief Harry J. Monahan, of Berlin, N. H., President of the club, directed the proceedings, assisted by the Secretary, Chief Albert C. Melendy, Nashua.

In his talk on ventilation Chief Fox stressed the need of sound judgment and common sense and said that the proper way to ventilate a burning building is to start at the top and work downwards. He said that fire officers must work quickly and scientifically. He discussed cellar fires, chimney fires, and the use of smoke ejectors, and answered many questions put to him by other Chiefs. He praised the club meetings as a means of bringing the Chiefs together for an exchange of viewpoints. He also told of the Boston Fire College.

Chief Charles H. French, of Manchester, described a plan for an officers' training school in New Hampshire.

It was voted to invite the members of the Forest Fire Wardens' Associations of the state to attend the February meeting of the club at which motion pictures will be shown of methods of fighting forest fires.

Chief French reported as Chairman of the Committee on Revision of the State Fire Laws. The meeting was preceded by a luncheon.

Among those present from outside the state were Frank M. Tiffany, of the Gamewell Company, Newton, Mass.; Harry J. Lovell, of the B. F. Goodrich Fire Hose Company; P. Hildreth Parker, Fire Prevention Supervisor, New England Telephone and Telegraph Company; and Ex-Chief William H. Hawkins, Haverhill, Mass. HARRY BELKNAP.

## Signal Association Meets in Boston

A two-day quarterly meeting of the New England Municipal Signal Association held in Boston on December 12 and 13. Frank Veit, Superintendent of Fire Alarms, Stamford, Conn., presided.

The speakers at the first session, held in the Hotel Kenmore, were Joseph F. Cook, Radio Engineer of the Gamewell Company, on "Police Radio Dispatching"; William F. Franklin, New York, who discussed fire protection from the signaling viewpoint; Joseph Sidall, Secretary, New Jersey Fire Alarm Company, Newark, N. J., who gave a history of auxiliary and ground return fire alarm systems; and W. S. Borden, Manager, Borden Electric Company, New Jersey, who gave a demonstration of a groundmeter. There was a discussion of auxiliary fire alarm systems.

A dinner was held in the hotel, followed by a round table discussion. On the second day the members paid a visit to the new three-fold Gamewell fire alarm headquarters in Cambridge, where they were welcomed by City Electrician Timothy C. O'Hearn and James H. McAllister, Assistant City Electrician. The system was explained by Frank R. Bridges, Chief Engineer of the Gamewell Company.

George L. Fickett, Superintendent of the Fire Alarm Division, Boston Fire Department, reported as Chairman of the special committee on shunt master boxes.

After the visit to the Cambridge fire alarm headquarters the members of the association had luncheon at the Kenmore Hotel and then visited the Boston Fire Alarm Headquarters in the Fenway.

The next meeting will be held in Norwich, Conn., in March. At this time there will be demonstrations of joint pole construction and a three fold fire alarm system. Secretary Alfred C. Ames, Superintendent of Fire Alarms, Providence, R. I., is in charge of the arrangements.

A committee has been appointed on joint pole construction composed of Superintendent A. L. Pierce, Wallingford, Conn., and John F. Knight, Springfield, representing the New England Municipal Signal Association; H. T. Jones, Boston, representing the New England Telephone and Telegraph Company; Carl Thomas, representing the New England Power Company; T. N. Bradshaw, of the Southern New England Telephone Company; and O. J. Zweidel, of the Connecticut Power Company.

A combined meeting with the New York State Municipal Signal Association and the New Jersey Municipal Signal Association will be held at Poughkeepsie, N. Y., in June.

HARRY BELKNAP.

## The Volunteer Fire Company

The late William Draper Brinckloe prepared the manuscript for a book, "The Volunteer Fire Company." Following his death the work was completed by the National Fire Protection Association, following out the author's plan, and it has been published by that organization.

It is a book for the community that does not have a fire department and for the village or county official who is interested in securing fire protection for his district. It is not a book for the fire department officer interested solely in knowledge of tools, drills and evolutions.

The author assumes that a community is interested in the formation of a fire company. He then touches on the various steps necessary. The material has been divided into the following chapters: Let's have a fire company; buying the engine; hose and helmets; chiefs and chaplains; building the engine house; when the siren sounds; dollars and cents; brass buttons; safety first; be it enacted; getting together; fire prevention; the private fire brigade; books and bulletins.

The operation, rules and regulations of several Maryland companies and associations are introduced for illustrative data. N. N. W.

**Three Memphis Firemen Killed by Falling Wall**

This is all that is left of an automobile showroom in Memphis, Tenn. Three members of the fire department were killed by a falling wall while fighting the fire.

# 32 Lives Lost in Hotel Fire

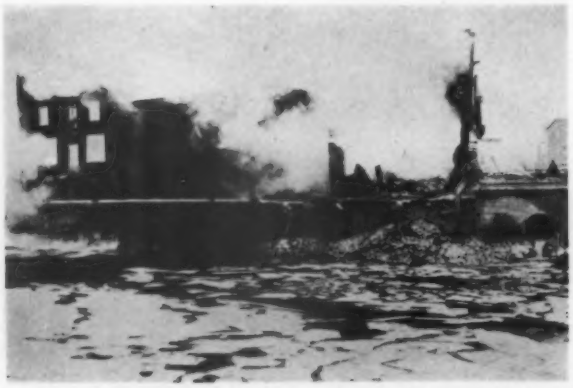
A delayed alarm and the quick-burning construction of the building were the chief contributory causes for the large loss of life when the Hotel Kerns was destroyed at Lansing, Mich.

By MOORE MEIGS

THE tragic combination of a delayed alarm and a quick burning building has been adjudged to be the principal reason for the loss of thirty-two lives, the injury of twenty-nine persons, and the destruction of the Kerns Hotel, Lansing, Mich., in the early hours of the morning of December 11, 1934.

The four-story hotel building, valued at $250,000, built in 1908 of brick with wood interior, was U-shaped, facing on North Grand and Ottawa Streets, with the remaining side against the smaller Wentworth Hotel, which occupied the rest of the block. The first story of the interior court housed the kitchens and heating plant, and the wide but shallow Grand River formed the eastern border at the rear of the property. On the night of December 10, with a temperature two degrees above zero, the 225-room hotel was practically filled, partly because the Michigan State Legislature had opened a special session on that date, and a large number of state representatives and lobbyists were numbered among the guests.

Fire was apparently started by a careless smoker on the second-floor suite of David Monroe, the Assistant Manager, who had entertained until a very late hour, and whose body was recovered the next day. About 5:15 a.m. a guest in an adjoining room notified the clerk of the blaze. The entire personnel on duty at the time consisted of the night clerk, a bellboy, and a scrubman. The clerk dispatched the bellboy to investigate, with the result that an intense fire was found to be rapidly involving the entire north wing. Much valuable time was lost in trying to awaken Monroe and others connected with the management, and Fire Department records show that the first alarm was not received until 5:30 a.m. Engines No. 1 and 2, with Ladders No. 1 and 2 under command of Assistant Chief William A. Redhed responded. The first company reached the scene within two minutes after receiving the alarm. By that time, practically the entire north and west wings were ablaze, the rapid spread of the fire being materially aided by a strong north wind.



Picture of the Hotel Taken from the Waterfront

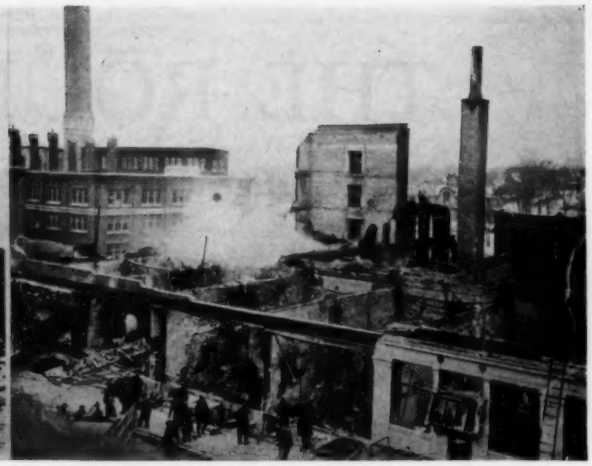
### Draft Created by Open Doors

It was stated by survivors that many guests opened the doors of their rooms and, seeing the corridors enveloped in flames, rushed to the windows and opened them to call for help or to jump, thus creating an additional draft. Also, it was subsequently reported that a few days previously the floors and furniture had been treated with a polishing compound that was not a fire deterrent. In any case, upon the arrival of the first companies, men and women were already jumping from windows, some with clothing and hair afire. Two persons were trying to reach the ground by means of bed sheets knotted together, but in both cases these burned through, and they fell. Ladder Company No. 1 at once spread a life net and raised ladders, resulting in the rescue of at least twenty persons, but so rapidly did the fire involve the entire structure that within twenty minutes of the receipt of the first alarm the front wall collapsed, carrying with it those unfortunates still trapped in the upper stores. The icy street was strewn with dead and injured, who were removed to an all night lunchroom across North Grand Street to await transportation to hospitals or morgues. All available ambulances and taxicabs were pressed into service and the work expedited to the limit, yet the cold was so intense that several hospital cases were treated both for burns and frozen hands and feet. At the rear, guests escaped by descending or jumping to the roof of the kitchen, thence to the ground, but in a short time this roof also fell, leaving no alternative for those remaining but to leap into the Grand River, which was covered with two inches of ice at the time. Some died here, and a few others miraculously escaped with their lives after crashing through the ice and swimming or wading ashore.

### Falling Wall Ends Rescue Work

Chief Hugo Delfs was one of the first arrivals at the scene, and three additional alarms placed eight engine and three ladder companies at his disposal. However, by the time the fourth alarm assignment arrived nearly all walls were down, and with no possibility of anyone being alive in the ruins, it became a question of covering adjoining exposures and cooling down the white hot mass to permit the removal of the bodies buried inside. In spite of heavy streams, the wreckage could not be penetrated until evening, and from that time on the Fire Department, aided by a force of two hundred PWA workers, steam shovels, and a wrecking car from the Detroit Fire Department, labored continuously until their gruesome job was completed. The final toll showed twenty-five identified dead, seven unidentified dead, and

Photo, courtesy of Detroit News



Photo, courtesy of Detroit Free Press

**Two Views of the Ruins of the Hotel Kerns, Showing the Proximity of Other Buildings**

twenty-nine injured. Among the dead were seven legislators prominent in Michigan politics, and in this connection a rather tragic echo comes from the minutes of the session of the State Senate the night before the fire, when Senator John Leidlein of Saginaw, protesting against the tabling of a resolution, said "I may not be here tomorrow. I may be dead." Senator Leidlein's body was found, the identification being made by his keyring.

It goes without saying that Chief Delfs and his men put up a remarkable battle in the face of tremendous odds. The entire first alarm assignment, especially Ladder Company No. 1 under command of Capt. Hugh Fisher, repeatedly risked their lives in the rescue work and continued until the front wall fell. Fortunately, this wall collapsed vertically, for had it fallen outward, it would surely have killed a large number of firemen and injured persons lying in the street. As it was, six firemen were injured by flying debris, the most serious being Firemen Lloyd Keck, who suffered a broken leg, and Carl Bailey, with cracked vertebrae. Without the efforts of the entire personnel, the death list would at least have been doubled, and their heroic conduct must command the highest praise. Also, there is no doubt that the work of the department in saving the adjoining Wentworth Hotel prevented a conflagration, as the destruction of this building would have resulted in the fire crossing Michigan Avenue, with ensuing tremendous destruction.

### Facts Revealed by Investigation

An investigation immediately launched by Insurance Commissioner Charles E. Gauss and Fire Marshals Sam Robinson, Edward Welch and Arnold Renner has brought to light the fact that the large loss of life was occasioned by (1) the delayed alarm, (2) the quick-burning construction of the building, (3) the hotel employees not being trained to cope with the situation nor sufficient in number, (4) lack of means of warning guests in time to escape. Their report comments on the work of the Lansing Fire Department as follows: "All the evidence shows that the Fire Department was exceedingly effective under the existing conditions in this rescue work. Your deputies feel that they cannot too highly commend the Fire Department of Lansing for the work performed at this fire." The Police Department also should be commended for their assistance in carrying out rescue work. Interviews with a number of survivors of the fire disclose that nothing but the highest of praise is due them.

This will doubtless result in legislation tending to correct the contributory factors in this fire, and may well serve as an example to the whole country as conditions at the Kerns Hotel were not as bad as those existing in hundreds of similar establishments from coast to coast at the present time. Recent inspections had showed that the building, although old, was provided with fire escapes and first aid equipment as required by law, and the whole lamentable event simply demonstrates again that no fire department in the world can extinguish a fire until it is notified that one is in progress.

## Massachusetts Chiefs Hold Christmas Party

Chief Fred A. Clark, of Attleboro, and Chief Selden R. Allen, of Brookline, shared the honors of conducting the annual Christmas party and ladies' day entertainment of the Fire Chiefs' Club of Massachusetts in the Hawthorn Room of the Parker House, Boston, on the afternoon of December 19. The vaudeville show was preceded by a luncheon, and the tables were decorated with favors and holiday trimmings. There was a large attendance, and the party was greatly enjoyed by the chiefs and their guests. Each lady was given a souvenir.

HARRY BELKNAP.

## Chief Lewis of Scranton, Pa., Resigns

Edmund B. Lewis, Chief of the Scranton, Pa., Fire Department, has presented his resignation to be effective January 15, due to political pressure which called for his demotion to Assistant Chief. Rather than accept the new status, he applied for a pension.

Chief Lewis started as a volunteer fireman, and has been a member of the paid department since it was formed in 1901. He was promoted from Captain to Assistant Chief in 1917. Seven years later he was reduced to the rank of Captain. In 1926 he was again made Assistant Chief, and following the retirement of Chief P. J. Rosar, he was made head of the department on August 1, 1930.

Battalion Chief John J. Kelly has been appointed to succeed Chief Lewis. He entered the service in 1898 and joined the paid department as an engineer in 1910. He was advanced to Captain in 1916, and served as Assistant Chief from 1922-1926. Kelly was demoted to Battalian Chief on August 1, 1926 and he has served in that office ever since that time.

# THE ROUND TABLE

## For Practical Discussion of Current Fire Department and Fire Management Problems

## REGIONAL FIRE SCHOOLS

KNOWLEDGE concerning the best means of fighting fires and preventing fires can be gained by the slow, laborious method of individual instruction whenever the opportune time arrives, and by studying approved text books. The latter plan, while ideal, requires more than the average perserverence and a determination to master the subject matter. Individual instruction has also proven effective but it presupposes that there is some one in the department who is capable of teaching, and a firemen who is anxious to become more efficient.

Short schools have been of immeasurable value to the departments. At these schools the men learn how to perform their work in the most efficient manner and with the least amount of effort. Not only do they learn by attending lectures, but they gain a certain degree of proficiency through practice in performing standard evolutions. They are given practical information as well as theoretical data.

In order that the good of these schools may reach the greatest numbers, regional schools have been established in districts where they are needed. One of the objectives of these schools is to train instructors so that when the men go back to their individual departments, they are capable of passing on the information to members of the force who could not attend the short fire course. Training firemen-instructors resulted in the benefits of the school reaching an untold number of firemen.

Although the regional school has proven that it is a required adjunct to the training of firemen, it is a comparatively new idea.

In the box on this page is the problem that is discussed in this issue. In the box on the following page is the question that will be treated in the next issue. Should you have some comments that you would like to add to the next discussion, you are invited to write to the "Round Table Editor," FIRE ENGINEERING, 24 W. 40th Street, New York, N. Y.

### HERE IS THE PROBLEM

In what way have you found regional fire schools of benefit and how have you participated in them?

In what manner have you found the state short courses of value to your men?

What are your suggestions for bettering the benefits obtained from the state and regional fire schools?

### Discussion of the Question

**Albert Herring, Chief, Murphysboro, Ill.:** For many years I was a regular attendant at the Illinois Firemen's Short Course which is held in the City of Urbana, Illinois, each year. I have found the short course to be of great value to my men, as well as to myself. Three or four days are devoted to problems which are of interest to those active in the fire service and in this way they receive instructions which would be impossible to get any other way. Talks are also given by men who have spent a great many years in the service. The drill tower instructions are a great help. The men have the use of the tower and are shown the various evolutions of the Fire Department.

All will agree that times have changed. What was considered sufficient in most lines of human endeavor in this country twenty-five, thirty or even fifteen years ago, is looked upon today as inadequate. Not that I believe that the fire fighters of today are superior to the leaders of the past, but the industrial, commercial and economic activities have become so complex that even the problems of our daily life have become likewise complicated.

Conservation of life, property and human energy must be taken more seriously than in the past. The forces upon which advancement of civilization depend are powerful gifts of the Creator, but when uncontrolled by the wisdom and judgment of man, these forces are just as destructive as they are beneficial. The day of fighting our fire waste, the greatest of the destructive force hazards in our modern life by the strong arm method is fast giving way to control through inspection, supervision, and scientific prevention. Training such as we receive at our short course prepares us to meet the above requirements.

Training over the checkerboard, and in muscular development is not altogether sufficient. We need more brain power, judgment, and knowledge of the cause and effect of fire. To this end the short course has been established and it is hoped that some time in the near future each fireman-student will be required to participate both manually and mentally in all phases of the work which is carried on by the short course, and in the end be examined to determine what progress he has made. The time will come when the State and the community will require the satisfactory registration of firemen. That is why we have established the short course to adopt a standard for the men to whom we trust the safeguarding of our lives and property.

There is another factor, which we must give some consideration and that is: Through the short course we can and will make greater headway in the much needed improvements of methods and procedure in fire prevention, control, and extinguishing; provided, we get the right kind of support and cooperation and in order to get that, the men who attend the short course must be primarily interested in learning.

Our short course should have the active support of the older chiefs, also the active support of the leaders of all organizations interested in fire control, fire extinguishing, and prevention. By this I mean they should be present and should be ready at all times to start and lead discussions, give the younger men advice based on experience and keep the ball rolling in the right direction. Then, and only then, will the short course begin to have the influence and respect and value it should have.

From my own experience I know that a firemen's course does pay; it is hard to measure the advantage. The knowledge gained is well worth the time spent at the short course.

**Claude R. Summers, Chief, Norman, Okla.:** I have found regional fire schools of great benefit to everybody concerned, as they bring out subjects that are of great interest and value to Fire Department members. Sometimes problems

which might seem of little consequence to you are of considerable trouble to a fellow member and at such schools these difficulties are brought before all those in attendance.

The State short courses are of great value to my men, as they bring new and quicker methods of performing different operations.

We are exceptionally lucky here in Oklahoma as we have a very fine instructor whose explanations are clear, and point out the essential parts of every lessons in such a manner that every man seems to grasp them. In my estimation we have a wonderful fire school.

**E. Archbold, Chief, Centralia, Ill.:** I have managed or acted as instructor for regional fire schools the last three years. These schools reach firemen who cannot attend the state school and give a better working advantage where towns help each other at large fires. It also helps to raise the department standard as it gives city officials a chance to see what is needed.

I believe that only Chiefs or men competent to serve as instructors should be sent to a state school as the program is so full and the time so short that the average layman does not absorb it all. As a result the average one goes home with his mind in a whirl and he is unable to impart the information gained. I also believe that there should be a full time department instructor in each state. As many two to three-day regional schools should be conducted as are necessary to properly cover the state.

**Louis A. Perret, Chief, Bonne Terre, Mo.:** Our department has held one regional school and found that it has helped us in more ways than one. We had the best of cooperation from the inspection bureau. Now we have a regional school in the southeastern part of the state each year.

The schools help us in handling different problems. We have an organization of fifty-four small cities. I am a regional school booster. I have attended the state school but I get more good out of the regional school.

**R. J. Tomlinson, Chief, Thomasville, N. C.:** I find that the fire schools held in our state are a benefit to the men because they instruct the men in the correct ways of handling hose, equipment and fire apparatus.

We have been sending two or three men to our fire school each year.

I believe that a good way to increase the benefits of the school would be to get more firemen to attend.

**Raymond Thompson, Chief, Paris, Ill.:** I have found regional fire schools a benefit by attending every school of instruction and discussing different methods of fire fighting.

The schools have been of value in teaching about fire inspections, handling of men, servicing hose and apparatus, and methods for saving life.

At the annual schools there should be instructors who are well versed in modern ways.

**John A. Grogg, Chief, Tiffin, Ohio:** My men and I have learned to be better firemen by means of the instruction gained at the schools. We have improved our fire drills. I have found the schools to be a great success.

The schools arouse enthusiasm in the men. It makes the work interesting to the firemen.

**Albert Chamberlain, Chief, Hillside, N. J.:** We are a neighbor of the city of Newark and we do not have a regional school but we receive the cooperation of the Newark Fire Department.

Our officers are invited and attend the Officers College of the Newark Fire Department. They find the college interesting and instructive.

The instructors bring out new ideas in fire prevention work and in extinguishing fires. They help us refresh the older ideas.

**Julius F. Jaeckel, Chief, Pekin, Ill.:** I have attended ten regional schools at the University of Illinois and I have participated in all deliberations. They have helped me a great deal. The men become better firemen by attending the schools.

Every man attending the regional schools should participate in all drills and lectures and make a written report. I have had men from our department attend the short courses at the University of Illinois for the past ten years.

**George M. Loud, Whitman, Mass.:** The regional schools in Massachusetts have helped the small town as well as the cities. It has brought about the standardization of ladder work, the use of hose lines and other equipment employed for fighting fires. It has created better understanding among our Chiefs as to the value and importance of mutual aid.

I am in the Zone Three class of the state fire school held at Brockton. I participated in the drills held at the tower of Station 6 and the lectures held at Fire Department Headquarters.

I found the state short course a benefit to the men, as they could report to their company every week for the ten weeks of different evolutions or lectures held.

I have one or two suggestions for bettering the benefits obtained. Some of the lectures should be given by some small town Chiefs on how to fight fires in dwellings. The small town has to accomplish much more with one or two pieces of apparatus than does the department in the larger community.

A drill tower should be erected so that practice could be obtained in the use of roof ladders and water lines without damaging surrounding property. Practice should be given in the use of a pumping engine and ladder truck, and in operating the various appliances carried on such apparatus. With such equipment available, the class could be divided into groups of eight men to each truck. At a given signal, the men should be directed to proceed to the tower and lay hose lines, raise ladders, connect the pumper to a hydrant and perform whatever other evolutions are necessary to perform some particular operation.

**William H. MacKin, Chief, Haddonfield, N. J.:** None of our members have ever attended a fire school. We are a volunteer department but do not consider that it is perfect. We have a population of 9,000 and have lost only one house in thirty-four years.

We have no fault to find with regional fire schools—in fact they perform a necessary function in teaching how to use tools for quenching fires.

Good fire fighters are born, we might say, with the instinct to do things properly at the right moment. We find that our best firemen are recruited from the building trade branches. Although men can be trained to handle fire fighting tools to perfection, some lose all reasoning power when they see smoke and flames. Our problems would be solved if we could find some way to overcome the effects that smoke and heat have on some of the men so that they might get at the base of the fire when real action is needed.

**Jack Kindstrom, State Department for Vocational Education, Phoenix, Ariz.:** In every walk of business life, there is always a steady demand for highly trained men. Large corporations have found it advantageous to maintain schools for their employees, whereby they will be more valuable to them.

The Arizona State Firemen's Association realizing that guess work will not put out fires and that the bulldog and hit and run days of the firemen were past, did not stand back and wait for some one else to go ahead. They immediately formed plans for a State-wide fire department educational program. Through the cooperation of the State Department of Vocational Education, a State Fire College has been established with instructors to travel from department to department putting on the standard course in Fire Engineering, as outlined by the Federal Board for Vocational Education and developed by our instructors and leading men in various departments. In addition to the material which has been developed by our own instructors for these classes, ideas have been freely used from other training courses throughout the country. It is believed that when material is of such a nature as can be generally applied, it should be used wherever possible. Special recognition and thanks are extended to the directors and instructors of the Los Angeles Fire College, who have been very cooperative in assisting us with our program, and in

## HERE IS THE PROBLEM FOR THE NEXT ISSUE

What particular inspections or regulations have you followed to safeguard lives and properties at Christmas time?

In what way have you prevented the accumulation of rubbish and boxes in stores during the holiday shopping rush?

What have you done to check possible fires by Christmas tree candle lights?

allowing us to use material which they have developed.

Credit is due Chief Joe Roberts, of Tucson, for conducting the first fire training classes in Arizona. During 1929 through cooperation with Mr. W. L. English, City Director of Vocational Education, at Tucson, he organized a number of classes for his men. A considerable amount of interest was developed in those classes. From this small beginning the program has developed to its present status and will no doubt continue to grow and develop in order to meet the needs for training which will become apparent from time to time.

Several Fire Colleges have been established in the larger cities throughout the United States and several states are preparing to start the State Fire Department Educational Plan for smaller cities that cannot afford to establish Fire Colleges of their own. Arizona is first to get started in this work and the program is to contain lessons on all of the many branches of the fire service and the numerous duties and operations that a firemen has to perform.

The instructors of this school, are men from the fire service, as there are no college professors who have any knowledge of the technique of fire fighting or any conception of the problems which may confront fire fighters.

It is not the purpose or intention of the State Fire College to try to tell or to push high powered ideas, into the many departments of the fire service, but merely to teach authentic and tried methods and practices and present them in a practical manner with the thought in mind of assisting those in the fire service to perform their work as efficiently as possible.

The present plan of the State Fire College is to present each of the following branches of the Fire Service in a series of ten lessons of two and one-half hours each, at the time of day that is convenient to the department receiving the instruction. Upon completion of each course of instruction and examinations, on each branch of the service, a proficiency card will be issued. At the completion of all of the subjects, when a man graduates from the Fire College, he will receive a diploma for which he has worked hard to obtain, and we know that he will go out with a better understanding of his duties in the fire service and thus be more valuable asset to the department and to taxpayers of his city.

At the present time, there are six instructors in this training program. We are under the capable leadership of George S. Sanders, Supervisor, Trade Industrial Education. Each instructor has had not less than ten years service. The instructors also make inspections in each city, helping and cooperating with the Chief and his many problems. They make talks before all kinds of clubs, giving information on fire prevention and the many problems of the firemen, making inspections of schools and holding school drills, talking fire prevention before the children, helping the fire service as a whole.

The following subjects are being taught: fire prevention, building inspection, fire control, first aid, rescue, salvage, arson, fire chemistry, hydraulics, drills, care of quarters, apparatus, hose and equipment.

## Graduation Held at Truro, Mass.

Forty-two firemen graduated from the zone training school held at Truro, Mass., on December 9 under auspices of the Vocational Division of the Massachusetts Department of Education. The Fire Departments represented were those of Provincetown, Truro, Wellfleet, Chatham, and Orleans.

M. Norcross Stratton, Supervisor of the firemen's training classes, presided and presented diplomas. The exercises were preceded by a turkey dinner in Fire Station No. 3 at North Truro. There was a talk by Chief Fire Inspector George O. Mansfield, of the Fire Marshal's Division of the Massachusetts Department of Public Safety. The arrangements were in charge of Chief Richard A. Magee, of the Truro Fire Department.

HARRY BELKNAP.

**A ladder truck** has been delivered to Nanticoke, Pa.

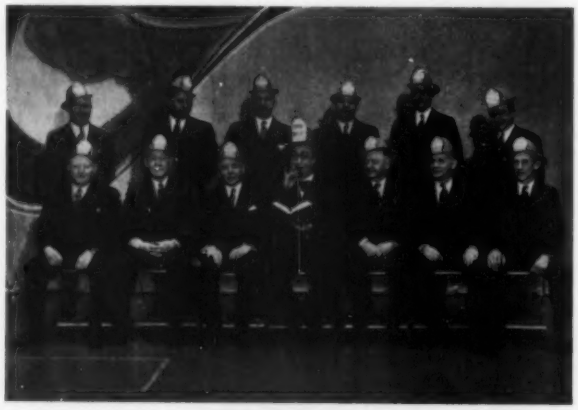
**While fighting a fire** on the grounds of the Warner Bros.-First National studios at Burbank, Cal., Chief Albert M. Rounder of the studio fire department, was overcome by smoke and died of a heart attack. Seven men were injured.

## New Jersey Chiefs Honor Ed Wynn

At a recent broadcast by Ed Wynn, radio's widely acclaimed Texaco Fire Chief, at the studios of the National Broadcasting Company, Radio City, New York, a delegation of Chiefs from New Jersey headed by Chief John J. Towey, of Newark, were guests. During the evening, Chief Towey, as President of the International Association of Fire Chiefs, of which Mr. Wynn is an Honorary Member, presented the comedian with an autographed copy of the "Fire Chief's Handbook." The small illustration herewith shows "Fire Chief" Wynn, holding the book and with Chief Towey at his side.

Ed Wynn and Chief Towey

Others present at the broadcast included Chief Andrew Callahan, Harrison; Chief John Gilday, Newark; Chief William O'Neill, Weehawken; Superintendent James Keegan, Newark; Chief Walter Scott, Kearny; Chief John Zanet and Assistant Chief James Sweeney, Clifton; Chief William Nelson, Passaic; Chief Aaron Baker, Maplewood; I. Herbert Case, Vice-President and General Manager and Fred Shepperd, Editor, FIRE ENGINEERING.



**N. J. Chiefs and Others Who Were Guests of "Fire Chief" Ed Wynn**

(L. to r.) Standing—Asst. Chief James Sweeney, Clifton, N. J.; Chief John Zanet, Clifton; Fred Shepperd, Headquarters Manager, International Association of Fire Chiefs; Chief William Nelson, Passaic, N. J.; Chief Aaron Baker, Maplewood, N. J.; I. H. Case, FIRE ENGINEERING. Seated—Chief Andrew Callahan, Harrison, N. J.; Chief John Gilday, Hoboken, N. J.; Chief John J. Towey, Newark; "Chief" Ed Wynn; Chief William O'Neill, Weehawken, N. J.; Supt. James Keegan, Newark; Chief Walter Scott, Kearny, N. J.

**A 750-gallon pumper** has been delivered to Herkimer, N. Y.

**The Iowa State Fire Chiefs'** Association held a meeting at the Hotel Kirkwood in Des Moines to take steps for legal assistance in preventing the occurrence of a hotel fire such as broke out in Lansing, Mich. Chief Callahan, President, said that Iowa has been lax in regulating fire protection in hotels. The Chiefs have asked repeatedly that no hotel be permitted to operate unless of fireproof construction, or protected by an automatic sprinkler system.

# Questions and Answers

**NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified**

## Protecting Extinguishers; Suction Hose

*To the Editor:*

Will you please give me information in regards to using calcium chloride in 2½-gallon, as well as the 35-gallon, extinguisher (soda-acid) type to keep them from freezing; and if this can be used, how much to the gallon should be used?

When foam extinguishers are kept outdoors is there any way they can be protected other than keeping them in a regular cabinet with heat from an electric bulb?

Will using two 3-inch soft suction hose with 2½-inch couplings deliver more water to the pumper than using two 2½-inch regular soft suctions? If so, how much more?

Will using a 4½-inch soft suction with a reducer of 2½-inch on the hydrant deliver as much water, or what proportion of water to the pumper, in comparison to two 2½ soft suctions?

In the above questions the mains are of 6-inch diameter or larger, with water pressure at 55 pounds.

Is it necessary to use large hard suction to the pumper when water pressure is 55 pounds in the main and main is 6 inches? Hard suction being 4½ inches.

H.T.A.

*Answer:* Calcium chloride cannot be used for lowering the freezing point of chemical extinguishers (soda and acid). The addition of calcium chloride will destroy the reaction within the extinguisher when it is operated. As a matter of fact, about the only way you can protect soda and acid extinguishers against low temperatures is to place them in a heated compartment. The same applies to foam extinguishers.

And now with regard to suction lines on hydrants. Two 2½-inch standard length soft-suctions will give you all the water you will need for your pumper, if the pressure at the hydrant remains around 50 pounds. There would be very little, if any, advantage in using 3-inch or 4½-inch suctions for a single pumper at a hydrant where a good pressure is maintained. If the suction line consists of 50-foot lengths of 2½-inch hose, then there would be a distinct advantage in using the larger diameters. The friction loss in a standard length suction hose is so small that it is rarely taken into account except where an engine is to pump at its maximum capacity where hydrant pressure is subnormal.

## Some Questions on Fire Extinguishment

*To the Editor:*

1. What is used to extinguish (A) lime fire, (B) liquid fire, (C) electric fire?

2. What type fires are extingiushed by something other than water?

3. When arriving upon the scene of a fire, should the fireman await orders? If not, under what conditions?

4. What is fire foam?

5. Of what use is sand for fire fighting? What types of fires are fought with sand?

6. If I had reason to believe that another fireman was wearing my rubber clothes while I was off duty, should I inform my captain or the fireman using my clothes? Give reason for answer.

7. When a building is belching forth smoke, is it advisable to open the lower windows, or open the upper part of the building? Why?

8. What is meant by house watch? fire lines?

9. Will sun continuously shining upon cardboard or rubbish start fire spontaneously?

10. Which is the most dangerous fire: a fire in a basement or a fire on the third floor?

11. Which is the most hazardous fire to fight: one in a heavily stocked building, or one in a six-story building or a tenement?

12. If a fire broke out on the third floor of a fireproof building, from a standpoint of sensible fire fighting by which of the following means would you attack it? Play the water to the seat of the fire from the street, as the third floor is easily reached; take hose lines charged with water inside the building; take hose lines charged with water up the ladders, so the firemen can operate without inhaling smoke or play the water from an adjoining building?

P. R.

*Answer:* 1. A. Water streams of sufficient capacity. B. Foam, or carbon dioxide gas. C. Carbon dioxide gas, or carbon tetrachloride.

2. Inflammable volatiles and oil fires; electrical fires.

3. If a firemen arrives before a superior, he should take such action as his judgment dictates, for example, saving life, etc. If he arrives with his company, he must take orders from his superior.

4. Fire foam is a foam produced chemically and in which the bubbles enclose carbon dioxide gas. It is employed for smothering fires, particularly those in inflammable liquids.

5. Sand is employed for handling small inflammable liquid fires on floors, and in similar situations. The sand is thrown over the burning surface, and effectively smothers the fire, if it is not too large. Sand is also employed for fires in metallic powders.

6. If this point is not covered by your rules and regulations, theoretically you should report the matter to your captain. But a more sensible method of handling it would be to speak to the fireman himself, and thus avoid unnecessary friction in the company. If he did not stop the practice, then it would be time to report it to the captain.

7. The upper part of the building is usually opened first to permit inflammable gases and smoke to reach the atmosphere; subsequently lower openings are provided. Such procedure aids in preventing back draughts.

8. By "Housewatch" is usually meant the member of the uniform force stationed at the desk in the fire station at all times. By "fire lines" are meant lines established by the police department to prevent crowds from getting near the fire and interfering with operations of the department.

9. The sun shining upon cardboard or rubbish will not ordinarily start fire. If, in the case of rubbish, there is quite a bulk of it, and it is saturated with vegetable oil, spontaneous ignition might result, although this is highly unlikely if the rubbish is placed in open air where a draft may carry away heat as fast as it is generated by chemical action.

10. Basement fires are considered more troublesome and, unless promptly detected, should be considered more dangerous than a third floor fire. Of course, the question of life hazard enters into the problem. If the building houses a large number of employees, the third floor fire may be the more serious of the two.

11. Sufficient information is not given to answer this question intelligently. As far as fire-fighting operations are concerned, heavily stocked buildings, of several stories in height, represent a more severe problem than a six story building lightly occupied. Tenements on the other hand, do not represent a very hard job for the Fire Department but the pos-

sibility of tenants getting trapped might make this type of fire more dangerous from the standpoint of life than the other two.

The usual method of handling such a fire is to take charged lines inside the building either by way of the inside stairway or by way of ladders leading up to fire escapes or windows. If a standpipe is provided in a building a line is stretched from the standpipe connection below the fire floor up to the fire. Little can be accomplished by operating from the street or adjoining buildings unless the fire is very far advanced and it is impossible for the men to enter the fire floor. Furthermore, this method of fighting fire would result in much heavier water damage than necessary by modern fire-fighting methods.

Modern methods of ventilating make inside work for firemen comparatively easy, and unless the floor is dangerously weakened or overloaded there should not be particular hazard to men operating inside the structure.

## Suction Hose Under Pressure

*To the Editor:*

Recently a question came up in our department concerning the use of suction hose as a reservoir when relaying water. It was stated that it was wrong to do this as suction hose is built for draft and will not stand much over 50 pounds pressure.

Will you kindly answer the following questions?

1. A pump at hydrant, or draft, is pumping water through 1,000 to 1,200 feet of 2½-inch hose to a pump in relay. Would it be advisable to use the suction hose as a reservoir, or hookup to a pump direct?

2. If suction hose is used as a reservoir, and the pump in relay shut-off while the pump at the hydrant or draft continues to pump, would the pressure at the pump in relay be the same as the pump at the hydrant?

3. Would the pressure break the suction hose?

4. On the other hand if a reservoir is not used and the pump at the hydrant or draft is unable to supply enough water to the pump in relay, would the 2½-inch hose be pulled flat? Would the suction from the pump in relay pull out the rubber in the 2½-inch hose or injure it in any way? E. J. D.

*Answer:* Well built suction hose, particularly of the rigid type, should stand as much pressure as the hose used in the lines. Although not ordinarily subjected to high pressures, there is always a possibility of water hammer, or ram, being transmitted from the nozzle, when it is shut too quickly, through the hose line, to the pump, to the suction hose and doing damage to the suction hose.

In the layout you suggest, there would be no advantage whatsoever in using a length of suction next to the intake side of the suction pumper. There is practically no "give" to the suction hose, so that you would not have the effect of a reservoir to equalize the flow into the second engine. As a matter of fact, the 2½-inch line from the first and second engine would provide a far better reservoir than the suction hose, due to the fact that increase in diameter under pressure would represent a larger amount of water in storage than would that within the suction hose length.

Where a suction hose length is used on the intake side of the pumper, and the first pumper is shut down, the suction hose should not burst, if the 2½-inch hose would stand the pressure. In this case the pressure at the intake of the relay pump would be the same as the discharge pressure at the pump at hydrant, if both engines were at the same elevation.

When hose is flattened out, due to a vacuum, or partial vacuum on the line, no damage is done to the lining of the hose.

If it is found in the problem you state that there is not enough water to supply the second engine, the best thing to do is to reduce the size of the nozzle in use, and slow the second engine down so that it will not be pumping more water than is being furnished to it from line from the engine at the hydrant.

**Officials of Rock Island, Ill.**, voted to invite bids for new fire appartus to be housed in Station No. 4.

# JUNIOR FIRE DEPARTMENT FORMED IN DAYTON, OHIO, PUBLIC SCHOOLS

### Manual for the Operation and Control of the Department Adopted for the Governance of the Junior Firemen

THE following Manual for the Operation and Control of the Junior Fire Department in the Dayton, Ohio, Public Schools has been approved by the Assistant Superintendent of Schools and Chief William A. Carver, of the Bureau of Fire Prevention of the city. Chief Carver has been active in the installation of this program in the schools of Dayton, and credit for its success is largely due to his efforts.

## Rules and Regulations Governing Junior Firemen

### Section 1

1. The principal duties of the Junior Firemen are the study and application of Fire Prevention Laws and Regulations in the schools and at home.
2. It shall be the duty of all Junior Firemen to conduct themselves as honorable citizens and to respect the laws of the city and state.
3. It will be the duty of all Junior Firemen to acquaint themselves with the following rules and regulations.

### Section 2. Qualifications

1. Boys for the Junior Fire Department should be selected from the senior grade of the school. Boys of the next lower grade should be used as alternates or assistants. In this manner boys will be in reserve and trained for the last year of school.
2. Junior Firemen should be boys who are physically large enough to assist others of the school to safety in the event of an emergency. This is of vital importance, as the appalling death rate of the schools show each year. The larger boys are preferred if the other qualifications are complied with.
3. Junior Firemen should be boys who are mentally capable of taking the initiative in the event of an emergency.
4. Junior Firemen should be boys who are physically free from defects of limb, sight, hearing and voice impediments, et cetera.
5. It is imperative that the boys of the Junior Fire Department be courageous. The lives and safety of the pupils and teachers may depend on this.
6. If boys who are selected for the fire squad have personality plus the other requirements, it will greatly assist in maintaining an efficient organization; also there will be less trouble in maintaining discipline in the ranks of the school.
7. The qualties of leadership are necessary for the efficient functioning of the Junior Fire Department. Therefore, appointments as Captains should be given only to senior grade boys who can fully qualify to all the above requirements.

### Section 3. Organization—Administration

1. There shall be a Captain in command of each school unit of eight boys. This to apply to the first unit, Lieutenants being in command of each additional unit of eight boys or fraction thereof.
2. Captains to be appointed from senior grade only.
3. Each unit to consist of five members from the senior grade and three members from the next lower grade as apprentice or assistant members.
4. School organization of units should be adapted to the particular requirements of each school.
5. Two members for each exit door of the school.
6. Additional members as needed for guides or leaders, at inside doors, stairways and corridors. Firemen to be on duty for Fire Drills, Inspections and complete vacating of building and, if needed, for general school activities.

### Section 4. Duties of the Captain

1. In each school, the Captain as commanding officer shall preserve order and discipline in the ranks of his school unit.
2. The Captain, with the help and advice of the principal or advisor, shall assign firemen to their respective stations.
3. The Captain shall report to the principal of the school or the advisor of the unit, any insubordination of any member of the unit.
4. If any member be reprimanded three times in any one semester for any infraction of the rules such as, conduct unbecoming a fireman, insubordination, inefficiency, inattendance, etc., he shall be dismissed from the unit and be denied any privileges that may be due at that time.
5. Reprimands for the first two offenses to be at the discretion of the principal or advisor.
6. It shall be the duty of the Captain to see that all exits of the auditorium be attended by Junior Firemen during assemblies and, in the event the stage is being used, to see that firemen are stationed there.
7. The Captain shall be responsible for the efficient functioning of the school unit in the dispatch of their duties.
8. It shall be the Captain's duty to report the absence of any member from his regularly assigned station during school hours.
9. It shall be the duty of the Captain to impress upon the

members the importance of attending all fire schools and called meetings.

10. It is the duty of the Captain, at all meetings authorized by the Assistant Superintendent of Schools, to take notes of the instructions and business conducted at that time. In the event of the absence of the Captain another member to be deputized to act in his capacity.

### Section 5. Duties of the Lieutenant

1. It shall be the duty of all Lieutenants to obey all orders, rules and regulations as prescribed by their Principal, Advisor and superior officer.
2. It shall be the duty of the Lieutenant, when deputized, to act in the capacity of Captain during his absence.

### Section 6. Duties of Junior Firemen

1. It shall be the duty of all Junior Firemen to obey the orders of their superior officers in the unit to which they are attached.
2. After being assigned to some position and on duty, no fireman shall leave his post until relieved by some other fireman at the order of his superior officer.
   - 2 A. Regularly inspect, each day, all fire doors to see they are in working order.
   - 2 B. See that all doors to fire escapes are accessible and allow nothing to be placed to obstruct the doors to, or on the fire escape itself.
   - 2 C. See that all doors to fire escapes are unlocked and usable each day before the beginning of classes.
3. It will be the duty of all firemen to preserve order in the buildings of all schools, during school hours.
4. It will be the duty of all firemen to make an inspection of the building twice a month to see there are no fire hazards present. If any hazards are present they are to be reported to the Captain.
5. Firemen are to supervise all fire drills and maintain order while the building is being vacated or the classes are reentering the building.
6. Firemen are to see that all waste materials are to be removed from the building each day.
7. In schools where there are manual training rooms or paint rooms, all waste materials are to be put in metal containers with tight fitting lids. Waste to be disposed of by the janitor at the end of the day.
8. All cupboards are to be cleaned of any waste paper, rags, etc., and where these are found the persons responsible are to be instructed to keep them in a safe place or to be disposed of immediately.
9. All ashes to be stored in fire-proof ash pits or metal containers and to be removed from the building regularly.
10. All stairways to be equipped with banisters in good repair.
11. All attics and storage spaces to be cleaned of any and all scrap and waste materials and all combustible materials to be stored in an orderly fashion with all precautions to be taken to prevent fires from starting in these rooms. All storage rooms to be kept locked and inaccessible to the pupils of the school unless they have permission from the teacher or person responsible for that room.
    - A. All floor oils, mops, rags, etc., used in the upkeep of the school to be kept in the basement in a fireproofed room, none to be in any closets or locker spaces in the building.
    - B. At no time shall there be more than one gallon of gasoline, and this to be in a metal can with a screw top, can to be in good condition.
12. Do not allow any decorations around the light bulbs; all lamp shades, etc., to be far enough from the bulb that they will not heat, or in any way come in contact with the bulb.
13. If matches are used in the school see that they are the safety matches only.
14. If irons are used in the school see that they are equipped with stands to rest on; one or more inches high and to be equipped with pilot lights to indicate when the current is on or off.
15. Allow no collection of paper for sales, etc., to be stored in the building. If paper is collected for sale it must be stored outside of the building and be disposed of the same day it is collected.
16. In the event any fireman is in doubt as to a fire hazard he is to telephone or visit the Bureau of Fire Prevention, 15 East Monument Avenue and consult the Chief of the Bureau for information.

### Section 7. Duties Outside of the School

1. All Firemen should know the location of the two nearest fire alarm boxes to the school.
2. All Firemen should know the location of the two nearest fire alarm boxes to his home.
3. All Firemen should know the Fire Department Telephone number—HE-1234.
4. It is a serious and dangerous violation of the law to send in a false alarm of fire. Every Fireman should take every opportunity to discourage this costly and dangerous practice.
5. Junior Firemen should feel free at any time to call at the Fire Prevention Bureau or at the nearest engine house for information, advice or assistance in their duties.

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**Cleveland, Ohio, opened bids** for supplying an 85-foot ladder truck.

**Steps are being taken** by Dinuba Township, Cal., to obtain rural fire protection.

## WHAT'S BURNING?

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of December, 1934. These figures, compiled from the telegraphic reports are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

| Month Ending December 31 | Loss in Thousands of Dollars |
|---|---|
| Birmingham, Ala.—Foundry plant of Hill & Griffith Co. damaged | 100 |
| Buchanan, Mich.—Yards of Buchanan Lumber Co. destroyed | 50 |
| Burbank, Cal.—Warner Bros. First National Studios damaged | 250 |
| Poplarville, Miss.—Business property damaged | 80 |
| Montreal, Que., Can.—Bldg. at Cote des Neiges Cemetery | 50 |
| Memphis, Tenn.—Bldg. occupied by Johnson Motors, Inc. | 80 |
| Hutchins, Pa.—Plant of Hutchins Silica & Sand Co. | 50 |
| Ocean Grove, N. J.—Clarendon Hotel destroyed | 50 |
| Portland, Me.—Two wharves and several small vessels | 160 |
| Chicago, Ill.—Plant of Nat'l Steel & Copper Plate Co. | 125 |
| Paterson, N. J.—St. Bonaventure's Catholic Church | 50 |
| Atlanta, Ga.—Christman Hall at Clark University destroyed | 50 |
| Charlestown, Mass.—Automobile accessory warehouse destroyed | 50 |
| Lansing, Mich.—Kerns Hotel destroyed | 300 |
| Pelahatchie, Miss.—Sawmill of Pearl River Valley Lumber Co. | 80 |
| Baltimore, Md.—Factory of Atlantic Rag Co., destroyed | 150 |
| St. Paul, Minn.—Furniture store of Borg & Powers | 65 |
| San Francisco, Cal.—Ballroom of St. Francis Hotel destroyed | 80 |
| Alameda, Cal.—Plant of McClintic Marshall Corp. damaged | 350 |
| Hawley, Pa.—Fairplay Knitting Mills, Inc., damaged | 80 |
| Englewood, N. J.—Livingston bldg., business and apt. structure | 80 |
| Macon, Ga.—Barfield Feed Mills damaged | 50 |
| Dickeyville, Md.—Factory of Kitchen Cabinet Corp. damaged | 65 |
| Wilmington, Ohio—Several business establishments | 65 |
| Maryville, Tenn.—Five business establishments damaged | 50 |
| Winona, Miss.—Yolles & Schneider dept. store, adj. property | 50 |
| Sherbrooke, Que.—Potton Springs Hotel destroyed | 50 |
| Dryden, Mich.—Business property | 60 |
| Harrodsburg, Ky.—Business and residential property | 50 |
| Fitchburg, Mass.—Senior High School bldg. destroyed | 600 |
| Lexington, Va.—Tucker Hall at Washington & Lee University | 70 |
| Port Jefferson, N. Y.—Belle Terre Lodge destroyed | 125 |
| Elmsford, N. Y.—Business and residential property | 200 |
| Montgomery, Ala.—Property of Beaver Dam Stock Farm | 60 |
| Randolph, Mo.—Hecla Hall destroyed | 80 |
| Toronto, Ont.—Thorncliff race track stables | 50 |
| Schenectady, N. Y.—Hudson Theatre destroyed | 50 |
| Shelbyville, Tenn.—Courthouse destroyed | 50 |
| Hancock, Md.—Business property | 50 |
| Martinsburg, Mo.—Business district damaged | 50 |
| Toledo, Ohio—Government armory destroyed | 700 |
| Coburg, Ont.—House of Refuse destroyed | 80 |
| Harlingen, Tex.—Bldg. occupied by Service Wholesale Grocery Co. | 90 |
| Phoenix, Ariz.—Grandstand at Arizona State Fair Grounds | 80 |
| Knoxville, Tenn.—Jefferson Hall at Uni. of Tennessee | 80 |
| Abington, Mass.—High school building destroyed | 200 |
| Peekskill, N. Y.—Lake Mohegan Country Club Inn, 4 mi. east | 50 |
| Ashland, N. H.—Squam Lake Hotel destroyed | 80 |
| Valparaiso, Ind.—Porter County Courthouse destroyed | 50 |
| Fredericktown, Md.—Lodge of Frank du Pont destroyed | 80 |
| Penn Yan, N. Y.—Plant of Penn Yan Bodies, Inc., damaged | 80 |
| Lancaster, Pa.—Property of Martin Lumber Co. | 50 |
| Brunswick, Md.—Baltimore & Ohio Y. M. C. A. destroyed | 50 |
| Shenandoah, Va.—School bldg. destroyed | 50 |
| Boston, Mass.—Central Congregational Church destroyed | 100 |
| Sommerville, Mass.—Business property at 238-44 Elm St. | 65 |
| Shellbrook, Sask.—Shapiro store destroyed | 50 |
| North Truro, Mass.—Cape Cod barracks of U. S. Naval Radio Sta. | 65 |
| Ogunquit, Me.—Business and residential property | 50 |
| Saratoga Springs, N. Y.—The Brook, a night club, destroyed | 150 |
| Muncie, Ind.—Muncie building damaged | 50 |
| San Angelo, Tex.—Warehouse of Texas Stockman Co. destroyed | 100 |
| Quincy, Mass.—Plant of Grossman & Sons | 100 |
| Meridian, Miss.—Cochran office building destroyed | 80 |

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## Lives Lost in Tenement House Fire

Fire which started on the second floor of an old law tenement house building in Bronx borough, New York City, on December 8, swept through the five-story building and claimed the lives of two children, their mother, and an elderly woman. Fire broke out at 4.30 a.m. and quickly mushroomed through the building.

Assistant Chief David Kidney ordered three alarms sounded. A stiff breeze was blowing from the Harlem River.

Apartments in the building were of the "railroad" type, two apartments to a floor. The only fire escape was at the rear and joined fire escapes of the next building.

An official of the Tenement House Department said, "It was a perfect example of what can happen in old-law tenements," and that he was in full accord with a plan proposed of having fusible link skylights in old buildings which prevent fires from mushrooming.

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**Spokane, Wash., plans** to purchase some time in 1935 a ladder truck and a pumper with funds provided through a $10,000 appropriation.

# QUALIFICATIONS AND DUTIES OF THE FIRE DEPARTMENT MECHANIC

**Should Have Mechanical Experience Before He Comes Into the Department—His Work and Responsibilities**

By David J. Corcoran
Superintendent of Machinery, Milwaukee, Wis., Fire Department

TO my way of looking at this topic it makes no difference whether you are from a first class city or from a fourth class city, the problem of the Fire Department Mechanic, his qualifications and duties, are the same.

I will first consider the people, who have their money invested in taxes, a part of which goes for the support of the Fire Department. There is only one man in each Fire Department that must answer to the taxpayer for the efficiency and low cost of upkeep and that man is the Chief of the Department. In order for the Chief to make his department produce and his officers and men assist him properly, he must keep his apparatus and equipment in first class condition, as it is absolutely impossible to replace them every couple of years.

## Selecting the Fire Department Mechanic

One of the many ways to show the people who help to support the Fire Department, that it is being run for their best interests, is the method employed in the selection of a mechanic to service the equipment. I deem it absolutely essential that the person employed be fully qualified for the position. There is quite a difference between a driver of apparatus and a mechanic in the Fire Department. A driver can be made after he becomes an employee in the Fire Department but a mechanic must be a man that understands the "science of mechanics." I say without any fear of contradiction that all men are not mechanically inclined and if an individual is not, why go through the trouble and expense of placing him in a mechanic's position when you know he should be filling some other job. To begin with, what qualifications are required of a mechanic in the Fire Department? My idea is as follows:

## Qualifications Required

To save expenditures in any Fire Department, large or small, the man should have mechanical experience before he comes into the department. Insofar as the ordinary department does not have sufficient repair jobs or overhauling of motors and apparatus to make a mechanic of a man, it is unfair to a community to have it spend money experimenting and trying to educate a person, when the equipment does not warrant it.

My idea of the proper qualification of a mechanic for any Fire Department, is a man who is thoroughly acquainted with motors. By that, I mean a man who has been in a shop where he had to produce a day's work. Such a man must make a good showing on the outside or he is soon out of a job. If he is called upon to overhaul a motor, he must be able to tear it down and put it back in a good running condition in the shortest time possible in order that his employer may build up an established reputation in the community. People will have faith in the concern, because of its good mechanics and their ability to produce a job for a low price. So when you employ a mechanic, select a man who has been educated and trained with some outside concern, at their expense and time. When you get a man, who has received such training, after he comes into the Fire Department, he can apply his spare time to pumps, hydraulics and the working operations of the department.

## Duties of the Mechanic

Duties that this mechanic should be able to perform in order to qualify embrace all work to be done on motors and machinery. He should be able to handle any piece of machinery that is part of the department. For example, if he is in a small department and has very little in the way of tools and equipment to turn out work, there are usually outside concerns in the community who will gladly let the mechanic come in and do the work on their equipment in order to help the Fire Department out.

How many times have you had something happen at night, plenty of machine shops in your town but no mechanic to do the work? It may just be a small welding job or some similar work and if the mechanic employed by the department is capable of doing all around work as he should be, it will probably save you the trouble of putting your apparatus out of service for hours. The average department cannot afford to do that, for no city can afford to have high price apparatus and equipment out of service.

A man that qualifies as a mechanic should be carefully selected before he comes into a department, as everyone is concerned with the results of his work from the Chief of the department, who is responsible for and must protect the lives and property of the taxpayer, down to the lowest ranking man in the Fire Department, who must work with the apparatus and equipment, of which your qualified mechanic has to service and take care. The efficiency of the fire service and the very lives of the men themselves depend upon how well this man does his work.

From the foregoing it becomes apparent that the Chief of the Fire Department, who is held solely responsible for the safety of his men and the ability of his apparatus to respond and do efficient work when called, should be absolutely unhampered in the selection of the man he thinks best qualified to fill the very responsible position of Fire Department Mechanic.

(Excerpts from a paper read before annual convention of the Wisconsin Paid Firemen's Association.)

**INDEX TO VOLUME LXXXVII**

The Index to Volume LXXXVII, covering the issues of FIRE ENGINEERING from January to December, 1934, is now on the press and will be mailed to readers on request.

## Rhode Island Chiefs' Club Meets

Motion pictures of automobile manufacture were a feature of the regular meeting of the Rhode Island Fire Chiefs' Club on December 13, at Providence, R. I. Chief Frank Charlesworth, of Providence, President of the club, presided, and the members were entertained by selections played by the brass band of Saylesville. Ex-Chief Irving F. Patt, of Central Falls, was elected an Honorary Life Member of the club.

The annual meeting and election of officers will be held on January 10.

## Improvements Made at Columbus

Chief Edward P. Welch, of the Columbus, Ohio, Fire Department, has made a number of improvements. A drill school has been established, examinations are held regularly, and a squad wagon has been recently added.

The equipment on this new unit consists of oxygen masks, rubber suits, an acetylene torch, life nets, fifty tarpaulins, stretchers, inhalator, smoke masks, rubber pads, gloves and tools for cutting high tension wires, brooms and first aid kits. Members of the company have been extensively trained in life saving work. LARRY F. DONOVAN.

## Flashless Firecrackers

Flash firecrackers, largely manufactured in China, have been on the American market for a number of years, and have been responsible for a large amount of accidents. The ingredient which causes the flash is either magnesium or aluminum. These elements have caused accidents both during manufacture and in use.

American fire works manufacturers claim that they have been forced to manufacture flash firecrackers due to foreign competition. An agreement has now been proposed to the NRA to declare the production and sale of fireworks containing magnesium or aluminum an unfair trade practice.

**Urbana, Ohio, is planning** to enlarge its present fire headquarters with FERA labor. This improvement is considered important as all equipment will be centralized.

# DETECTION AND INVESTIGATION OF THE CRIME OF ARSON

**In Spite of Difficulties with Juries and General Public Sentiment, Convictions of This Type of Criminal Are Increasing**

By Herman P. Ruthenberg
Special Agent, National Board of Fire Underwriters

THE American people are subjected to great criticism for the lawlessness which is prevailing in this country. Lack of respect for the law and too frequent an unwillingness to punish offenders has tended to create a state of mind hard to describe.

The fact that arson so frequently is committed for the purpose of realizing upon a fire insurance policy too often creates in the minds of some individuals the idea that the insurance company is the only sufferer. By reason of this, witnesses are frequently unwilling to testify or give information; juries are loath to convict and the investigating of this class of crime requires an experience not ordinarily developed by investigators. In order to bring into the investigation of suspected incendiarism specially trained men, the National Board of Fire Underwriters in February, 1915, created a special department of Arson Investigators, maintaining offices at New York, Chicago, San Francisco and Denver. This department is supported by contributions from fire insurance companies but is primarily and fundamentally for the investigation of suspected fires regardless of insurance losses, if any.

Arson is a crime against the public and prosecution of this crime is prescribed by the laws of the state. With that thought in mind it was planned to bring to the aid of the law enforcement and law prosecuting officers throughout the country this assistance which we hope will be welcome.

## Investigating Fires of Suspicious Origin

We Special Agents investigate fires of suspicious origin at the request of fire insurance companies, also at the request of public officials and citizens. In fact, we investigate fires which come to our attention through newspaper clippings. I roughly estimate that approximately 50 per cent of our requests come from other than insurance companies, and this proportion is rapidly growing.

As Special Agents we start out with the thought that we are simply to assist the public officials, have no power of any kind and must avoid any possible public mention of our presence. We guard against any publicity or the assumption of any credit for anything done. Arson being described by law as a crime against the state should be investigated by the proper officials and it is our aim to simply place at the disposal of such officials men trained in the investigation of this particular crime.

Arson is coming to be considered one of the most atrocious of crimes, committed, as it is with premeditation, not on the spur of the moment and in anger. Not only are lives endangered but the possibility of wiping out entire communities by reason of a certain combination of circumstances and elements at the time of the blaze makes it a perilous hazard. A few years ago an incendiary fire practically wiped out the mercantile section of Manderson, Wyo., and it was considered very fortunate that a number of lives were not lost. Destruction of lives and property and the breaking down of the morale of the entire community may be the effects of incendiarism when it continues for any considerable length of time.

## Motives for Incendiary Fires

While the question of insurance enters largely as a motive, it is by no means alone. In one city an Arson Squad was established and every fire during the year was investigated. As a result, there were 47 convictions for arson in that city and the motive for each was established as follows: 20 were started for revenge; 12 by pyromaniacs; 12 to defraud insurance companies, and 3 to cover theft. These figures are being quoted to off-set the all too common idea that arson affects the insurance companies and should not be placed in the same category with other crimes.

During this period the long continued business depression has influenced greatly the crime of arson and its investigation and prosecution. Not only have weak characters yielded to the pressure for money, but failing income, the absence of normal credit and urgent family needs, have tended to produce so-called "desperation cases" involving defendants of normally good repute and character. At the same time, states, counties and cities have been restricted in the investigation and prosecution of crime for want of funds. Reduced investigating forces have resulted in many localities. Grand juries have not met, trial terms of court have been abandoned or curtailed, and funds for fees and expenses of witnesses and transportation of prisoners have not been available in a number of jurisdictions.

During 1932 there were 22 arrests for arson in the State of Colorado: 11 convictions, 5 acquittals and other cases pending. During the past year Special Agents for the National Board of Fire Underwriters have made investigations and submitted written reports covering 4,378 fires. Public officials in connection with the investigations in which our agents participated instituted criminal proceedings which resulted in 1,544 arrests. There were 580 convictions and 259 acquittals.

## Hard to Secure Conviction for Arson

There is no crime in the calendar in which conviction is harder to secure than that of arson. Two reasons may be assigned for this condition. First, a complete misunderstanding of the arson situation by those who have to do with judicial prosecution. Second, inadequacy of law covering this crime. The first can only be corrected by creating proper public sentiment through educational methods and by the realization of the people at large that every crooked fire brings upon all honest citizens increased taxation. The second, relating to laws affecting the crime of arson, has been effectively remedied in Colorado.

While improvement in the law of the state is of paramount importance, judicial cooperation is also a most desired result. We are constantly confronted with the dire results of misdirected sympathy on the part of both judges and juries. While we believe in considering crime with all due leniency, we must realize that the criminal with tendencies of arson is a most serious menace to society. It is almost impossible to imagine the scale on which this atrocious crime is now being carried on. It is estimated that the yearly incendiary loss amounts to approximately $125,000,000 of wholly illegitimate plunder taken from the pockets of the American people through the medium of crooked losses.

## Fire Departments Must Secure Evidence

Investigation of the crime of arson is, of course, a police function; however, we must depend almost entirely upon our Fire Departments to prove that the crime has been committed by someone. To develop a case of arson and justify the probability of conviction, several primary facts must be established in order to prove the guilt of the accused beyond a reasonable doubt. These might be briefly set down as "Why, When and Where."

It is necessary to introduce evidence that the fire actually occurred at a certain time at a place within the jurisdiction of the court. Direct and positive evidence must be introduced to establish the fact that the fire was of incendiary origin. It is extremely important to establish a positive motive and it is necessary to show by facts or circumstances, or both, that the parties under suspicion could or actually did set the fire in question. After the corpus delicti has been established in an arson trial, every fact or circumstance tending to throw any light on the case is usually admissible as evidence. The least of the crime of arson is the value of the property destroyed. Loss of life is too frequently attendant upon the crime and an incendiary fire, even though the motive was not to injure human beings, frequently gets beyond control and the lives of large numbers of people are jeopardized.

## All Fires Should Be Watched for Evidence of Arson

All fires should be watched for evidence of arson. As very few incendiary fires are started in exactly the same way, and as all the circumstances surrounding one fire may never be combined in another, it is difficult to suggest a course of procedure of any value except in the most general terms. The most important duty of a fireman in responding to an alarm is, of course, to see that no human lives are in danger and to extinguish the blaze as quickly as possible with a minimum of damage to the property.

But without lessening his efficiency in this regard, he should approach a fire with this query in mind, "Is it accidental or incendiary and, if incendiary, how did it start and who set it?" Mental note may be made as to whether the doors and windows are open or closed and locked. The color and odor of the smoke and the manner in which the fire is burning might prove valuable as evidence. It should be observed whether two or more separate fires are burning at the same time. Any material used to start the fire should be carefully preserved, and if saturated with any inflammable

or combustible substance should be placed in an air-tight container to prevent evaporation. Any article thought to have been used by the arsonist that might bear fingerprints should be handled so as not to obliterate the impression. The debris resulting from a questionable fire should not be swept out or disturbed until it has been carefully searched for evidence. The demeanor of the owner, if present at the fire, should also be observed. Discussion among the firemen after they have returned to the station should be encouraged and anything of a suspicious nature should be reported to the Chief.

(Excerpts from a paper read before the Annual Fire College of the Colorado State Firemen's Association.)

## Suggested Plan for Outside Response to Fire

The Chief of Larchmont, N. Y., George S. Towle, has prepared a size-up of the situation arising should a fire in his village have passed beyond control of the local protection available. This scheme is suggestive of what may be done to combat large fires in any of the communities that come under the jurisdiction of the Fire Chiefs' Emergency Plan, an organization of the Chiefs of Westchester County, formed for the purpose of mutual aid and cooperation. Following is an excerpt from the plan of assistance, as formulated by Chief Towle:

Fire in Larchmont—First alarm—entire Larchmont Fire Department; Second Alarm, aid requested from and sent by Weaver Street, Mamaroneck and New Rochelle.

Upon sending out a general call for aid, the following could be considered a possible response:

More pumps could be asked for but the relative shortage of water would indicate that only two pumps should be summoned in excess of all pumps that could be furnished with adequate water for 1⅛, 1½ and 1¼-inch streams (1⅛ and 1¼-inch should be used).

| | Gals. p.m. |
|---|---|
| The Larchmont Water Department pumps at full capacity would provide approximately | 4,000 |
| Mamaroneck Water via Post Road-Gables | 2,000 |
| Palmer Avenue "Hook Up" (East End) | 2,000 |
| Shadow Lane | 2,000 |
| New Rochelle (Dillon Road) | 2,000 |
| | 12,000 |

The five pumps working on 2nd alarm need 4,100 gallons, leaving approximately 7,900 gallons for more pumps for fire. These pumps might come from:

| Alarm | | Pumps | Delivering Gals. |
|---|---|---|---|
| 1st | Larchmont | 2 | 1,500 |
| 2nd | Weaver Street | 1 | 900 |
| | Mamaroneck | 1 | 900 |
| | New Rochelle | 1 | 900 |
| 3rd | General call for aid (Per Patrol) | | 4,100 |
| | A. Mamaroneck—additional | 1 | 900 |
| | B. New Rochelle " | 1 | 900 |
| | C. Harrison | 1 | 700 |
| | D. Rye | 1 | 700 |
| | E. Mt. Vernon | 1 | 750 |
| | F. Port Chester | 1 | 900 |
| | G. East Chester | 1 | 750 |
| | H. White Plains (2½ suction only) | 1 | 750 |
| | I. Scarsdale (2½ " " ) | 1 | 750 |
| | | | 11,200 |

The pumps reporting to fire—A, B, C, D, E, F, G, H and I should be accompanied by hose cars as they will be located too distant from fire to use single lines and must therefore siamese into one 1¼-inch or 1½-inch. These hose cars after supplying the pumps with hose should be used to leeward for their chemicals. They should then report at Fire Headquarters.

If possible, ladder trucks should be sent from New Rochelle, Mamaroneck, Rye, Port Chester, White Plains, Eastchester, etc., and as many chemical carrying hose cars placed to leeward as possible.

It has been said that the Chief of the locality where the fire occurs should be in command and to this idea I agree, but the time to assign the companies is now and Chiefs coming in on the flanks of the fire should take such action at once that might appear effective, only exercising care that the water they use is not in excess of what is needed for their work, as 13 other machines must be provided with water.

## Chief Ramby to Retire

Frank B. Ramby, Chief of the Dayton, Ohio, Fire Department, has filed an application for retirement after having served as department head since 1907. He reached his seventy-second birthday on January 1.

He was appointed to the department on April 1, 1878. His first appointment marked the change of form of city government. In 1887 he was advanced to Assistant Chief.

Dayton, with a population of 215,000, has had but two chiefs during the past fifty-four years. The ranking District Chief is William McFadden who has held that office since 1915.

## Small Fireboat Design

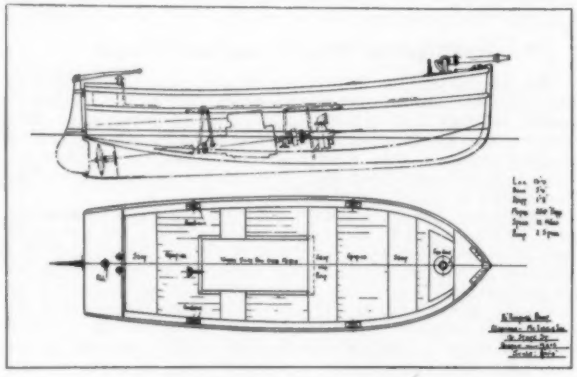
Walter J. McInnis, prominent Boston yacht designer and member of the firm of Eldredge-McInnis, Inc., has designed a small fire boat for use on lakes and rivers. The boat dimensions are: Length overall, 16 feet; beam, 5 feet; draft, 1 ft., 8 inches; and speed 12 miles per hour.

The following description of the boat was furnished by the designer:

The sixteen foot pumping boat, is a development of the two smaller outboard driven boats of this type, which have been so useful to the Boston Fire Department for the past three years. The architects, Messrs. Eldredge-McInnis, Inc., of Boston, show a complete little unit, small enough to get under wooden docks and piers, yet of sufficient size to permit the use of a regular multi-cylinder marine engine for propulsion as well as for driving the pump. The hull can be either of stout wooden construction or of corrosion-resisting metal, vee bottom for high stability and capable of holding a half dozen men.

The motor, of about twenty-five horse-power, is located just aft of amidships under a watertight metal box, so that the reverse lever is within reach of the helsman, aft. Slightly forward of amidships, under one of the thwartship seats, is the two-stage pump, shaft driven from the main engine and connected to it with a one-way clutch for flexibility of operation. Water is taken through a large seacock and strainer in the bottom to the pump and delivered to the small Morse gun in the bow. Standard hose and couplings are used in making the connections to the gun so that they may be demounted and hooked up to a Y fitting for shore work.

The gasoline fuel tank is located aft, under the deck, so as to feed by gravity to the motor and, at the same time,



Architect's Sketch of Small Pumping Boat

is insulated. Steering is accomplished with a demountable rudder and tiller, arranged so that the tiller may be dropped down between two towing bitts should the steersman be required suddenly for other work. Portable floor gratings, heavy chafing guards, rowlocks and other such equipment as would be found in any boat of this type, go to make up the balance of the gear.

Speeds up to twelve miles per hour may be obtained, depending on the load carried, and it is possible to fit the boat with hangers so that it may be hoisted on davits located on a dock or lifted into a boathouse.

The architects' estimate of cost is from eighteen to twenty-two hundred dollars, complete with all equipment depending on the general finish as well as point of construction.

HARRY BELKNAP.

**Gallup, N. M., has purchased** a 350-gallon pumper.

**A new pumper has been delivered** to Gloucester, Mass. It will be stationed at East Gloucester.

**A gold watch was presented** to Chief Rudolf Happ, of the Juneau, Wis., Fire Department, to mark his tenth anniversary as head of the department.

**Youngstown, Ohio has been urged** by members of the Council to construct a central fire and police station. The City Council voted to issue $500,000 bonds for the purchase of the property and the erection of the building.

## Oppose Reduction in Boston Fire Stations

The National Board of Fire Underwriters has expressed disapproval of the suggestion of the Municipal Research Bureau, of Boston, in the latter's report that the city close four of the 57 fire stations, thereby saving $760,000 annually. The criticism of the National Board, as requested, was received by the Mayor. It was held by the board that all present apparatus is needed to take care of the hazard as it exists today, but some suggestions are made for making the present equipment more effective through rearrangement.

## Chief McCarthy of Orange Dead

Michael J. McCarthy, Chief of the Orange, N. J., Fire Department for the past two years and the oldest member in point of service, died at a local hospital on December 13. He was fifty-nine years old. His death is attributed to injuries he received last February in fighting a hotel fire. Although he returned to duty a month later, he is said to have never fully recovered.

He was born in New York but moved to Orange with his parents when he was very young. Thirty-three years ago he was appointed a member of the Fire Department; a Captain in 1910 and a Deputy Chief in 1924. McCarthy was advanced to Chief on January 12, 1933.

## Only Subscribers Receive Fire Service

A brick residence just outside Atlanta, Ga., in the beautiful "Druid Hills" suburb, is in ruins because of a rule of the Druid Hills Fire Department which limited fire protection to subscribers. The house was located outside the city limits of Atlanta and the Atlanta department could not respond.

Capt. E. L. Blalock of the Druid Hills Department said: "Our company is run on a subscription basis and all we could do was to protect the house of a subscriber behind the burning house. We cannot, under our contract with our subscribers, fight a fire in the home of a non-subscriber."

Residents of the districts obtain fire service of the department by subscribing to a yearly fee which varies from $20 to $30 a year.

JOHN A. STUBB.

## Two Deputy Chiefs Appointed for Cambridge

Two new Deputy Chiefs of the Cambridge, Mass., Fire Department were recently appointed by Mayor Richard M. Russell with the approval of Chief Herman L. Gutheim. The men receiving the promotions from captain to Deputy Chief are Arthur L. Marshall and Joseph M. Caldwell.

Deputy Chief Marshall was born July 10, 1883, and was appointed to the Cambridge Fire Department on June 1, 1908, and assigned to Engine Company No. 5 at Inman Square. He was assigned as driver of the horse drawn steam engine in 1910; promoted to assistant engineman in 1914 and transferred to Engine Company No. 2 at Lafayette Square. He was promoted to lieutenant in 1919 and to captain in 1921, having headed the civil service list for promotion. He attended the Boston Fire College in 1932 and later was sent to New York to attend the Fire College there, being assigned to Rescue Company No. 1 by Chief John J. McElligott during his stay in New York. Upon returning he had charge of the organization of the new rescue company in Cambridge and commanded it until promoted to deputy chief on November 18 last.

Deputy Chief Caldwell was appointed to the Cambridge Fire Department on August 29, 1912. He was promoted to lieutenant on April 1, 1826, and was advanced to captain on February 22, 1932. He served in busy companies and took part in fighting fires in the manufacturing district of the city as well as in the Central Square section. His appointment as Deputy Chief was on November 18 last. These promotions are in line with the Cambridge plan to put younger men in responsible posts in the Fire Department.

HARRY BELKNAP

## McFadden Chief of Dayton, Ohio

William McFadden, Assistant Chief of the Dayton, Ohio, Fire Department was promoted to head of the department on January 1 to fill the vacancy caused by the retirement of Chief Ramby.

## Cheap Way Found to Fireproof Canvas

Following five years of research, the Bureau of Chemistry and Soils, U. S. Department of Agriculture, has succeeded in developing an inexpensive, weather-resistant treatment which fire-proofs canvas.

While the process at present can be used only with factory equipment, Dr. Martin Leatherman, who has carried on the experiments, hopes that it can be developed for home use and applied as a paint. It is believed that with further research the process can be improved upon and the cost further reduced, which will make for greater use of canvas. Public service patents have been obtained for the different methods of applying the treatment so that anyone may use them.

While the work on fireproofing canvas was primarily intended to reduce fire risks on farms where canvas is used to protect machinery and crops from the weather, it will have a wider application. The fact that canvas is combustible has been one of the drawbacks to its use for awnings and temporary shelters.

The development of weather-resistant, fireproofing treatment for fabrics is of importance to the Government itself, particularly in connection with national defense. Both the Army and the Navy use great quantities of canvas.

Dr. Leatherman believes this fireproofing treatment could be used on fabrics other than canvas. He suggests that it might be applied to special open weave cloth which is used to shade tobacco in Connecticut and for tobacco-plant beds in the South. Any fabric, he says, which has a cellulose base can be fireproofed by the process.

## The December Cover Photograph

Many requests were received from readers for additional information concerning the traffic accident illustrated on the cover of the December, 1934, issue of FIRE ENGINEERING.

The fire apparatus was on its way from Engine House No. 45, Baltimore, Md., in answer to a silent alarm. It roared across the intersection at Cross Country Boulevard and Sulgrave Avenue, with its siren screaming and its bell clanging. The trolley car came down Cross Country Boulevard. The crash impact sent the fire apparatus spinning on its side and derailed the trolley.

Gasoline from the wrecked apparatus flooded the street. Police cleared the intersection for fear that some spectator might drop a lighted cigarette and start a fire.

Four firemen were injured, the motorman of the trolley was hurt, and a woman passenger bruised. The side of the apparatus was splintered and it was virtually demolished.

An eye witness to the accident said:

"The fire apparatus was coming down Sulgrave Avenue, with its whistle blowing. I saw the car coming along the boulevard and I knew there was going to be an accident before they ever hit. For an instant it seemed as though the fire engine would get across ahead of the car. Then they hit. The street car struck the fire engine right in the middle and seemed to knock it right to pieces. The fire truck was knocked over on its side and firemen were thrown in every direction. The front of the street car was all smashed in and the motorman was badly hurt."

## Nashua, N. H., Entertains Firemen

The forty-sixth annual concert and ball of the Nashua Firemen's Relief Association was held in the City Auditorium, Nashua, N. H., on the evening of December 14, preceded by a banquet at the Harrisonia Manor.

Mayor Alvin A. Lucier and Chief Albert C. Melendy, of Nashua, welcomed the visiting fire officials including Chief and Mrs. Charles L. McCarthy, of Worcester; Chief and Mrs. William H. Hill, of Belmont; Chief and Mrs. Mellen R. Joy, of Saugus; Chief and Mrs. James C. Sullivan, of Lowell; Chief and Mrs. P. R. Lewis, of Ashland; Chief W. F. Woods, of Portsmouth; Ex-Chief and Mrs. William H. Hawkins, of Haverhill; Chief and Mrs. W. T. Happny, of Concord, N. H.; Chief F. M. Sargent, of Sunapee, N. H., and Fire Commissioners C. H. Austin and H. C. Lintott, of Nashua.

More than a thousand persons were present at the auditorium. Chief and Mrs. Melendy led the grand march and Captain Charles H. Tafe acted as floor director.

HARRY BELKNAP.

**Matthew Porosky,** Vice-President of the Gamewell Company, Newton, Mass., has been elected to the Board of Governors of the National Electrical Manufacturers Association, at the annual convention held in Chicago.

## Manufacturers' Announcements

### Office Calendar

An office calendar, with a picture that will appeal to those who find enjoyment in fishing, is being distributed by the Western Fire Department Supply Company, 1144 Corona Street, Denver, Col.

### Facts About Extinguishers

Number 4 of "Firefax," a company publication, has been issued by the Pyrene Manufacturing Company, Newark, N. J. It contains an article on, "When Is It Safe to Repair Extinguishers?" and other data of interest to the Chief.

### All Service Gas Mask

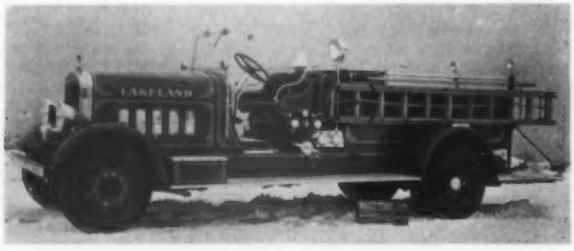
A bulletin describing the All Service Gas Mask has been released by the Mine Safety Appliances Company, Pittsburgh, Pa. The manufacturers state that the mask affords sure protection against carbon monoxide and all other poisonous gases where there is sufficient oxygen present to sustain life.

### Clothing for Firemen

Special Clothing Company, 4543 Ravenswood Ave., Chicago, Ill., are handling a complete line of clothing for firemen. This includes uniforms, uniform overcoats, boots, shoes, jackets, shirts, house pants and bunker outfits. They hold the patent for the detachable wool lining for firemen's coats, so that the coat may also be worn during warm weather.

### Pirsch Two-Stage Centrifugal Pumper

A 750-gallon two-stage series parallel centrifugal pumper has been delivered by Peter Pirsch & Sons Company, Kenosha, Wis., to Lakeland, Fla. The pumper has a 160 h.p. engine. It has successfully passed Underwriters' test. Following these tests the manufacturers obtained a delivery




Pirsch Pumper Delivered to Lakeland, Fla.

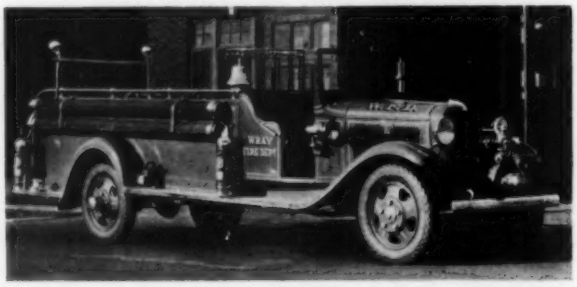
of 1,050 gallons per minute at 140 pounds net pump pressure, and 500 gallons per minute at 265 pounds net pump pressure from suction.

The following apparatus deliveries have been recently made by the Pirsch company:

Lakeland, Fla., 750 gallon centrifugal pumper; Cedar Rapids, Ia., two 750 gallon rotary pumpers; Racine, Wis., 1000 gallon rotary pumper; Cambridge, Mass., 85-foot hydro-mechanical aerial ladder truck; Spokane, Wash., 600-gallon centrifugal pumper; Denton, Tex., city service ladder truck; Duluth, Minn., Junior aerial ladder truck; Thompsonville, Conn., Junior aerial ladder truck; Billings, Mont., Junior aerial ladder truck; Winona, Minn., Junior aerial ladder truck; Burlington, N. C., Junior aerial ladder truck; Aurora, Ill., 750-gallon rotary four-way ladder truck; Waukesha, Wis., 750-gallon rotary pumper; Rochester, Minn., Junior aerial ladder truck; Caspian, Mich., 500-gallon centrifugal pumper; Blackshear, Ga., 500-gallon centrifugal pumper; Ephraim, Wis., 400-gallon rotary pumper; Markesan, Wis., 350-gallon rotary pumper; Ormond, Fla., 500-gallon rotary pumper; Yorkville, Wis., 400-gallon rotary pumper; Geneva, Ill., 400-gallon centrifugal pumper; Beaver Dam Township, Wis., Minute Man pumper; Ridgely, Tenn., 400-gallon centrifugal pumper; Hebron, Ill., 350-gallon centrifugal pumper; Somers, Wis., Minute Man pumper; Silver Spring, Md., 350-gallon rotary pumper; Norwalk, Conn., Booster pumper; Howards Grove, Wis., 350-gallon rotary pumper; Dane County, Wis., 400-gallon rotary pumper; Oakland, Ia., 400-gallon rotary pumper; Deerfield, Wis., 500-gallon centrifugal pumper.

### Western Fire Department Delivery to Wray, Colo.

Western Fire Department Supply Company, Denver, Colo., delivered a motor fire apparatus unit consisting of a Ford chassis, Proctor-Keefe body and a Barton pump to Wray, Colo. At an altitude of 4,500 feet, the Underwriters' test shows




Pumper Delivered to Wray, Colo.

a delivery of 517 gallons at 120 pounds pressure. These pumpers are manufactured in the 500, 350, and 300-gallon sizes, and in special sizes to meet special needs.

## Dana Pierce, Noted Engineer, Dead

Dana Pierce, nationally known for his fire prevention work and for his activities in the fire prevention field, died at Atlantic City, N. J., on December 18. On October 2 he underwent a major operation for an intestinal disorder at a hospital at Highland Park, Ill. In November he and Mrs. Pierce went to Atlantic City for his health.

Mr. Pierce was born in Claremont, N. H., April 11, 1871. His early schooling was in Newton, Mass., and in 1888 he entered Amherst College from which he graduated in 1892. He then became an instructor at the Hotchkiss School in Lakeville, Conn., and while teaching took special work in physics at Harvard and Cornell. He resigned from Hotchkiss in 1899 and spent a year as graduate student in physics and mathematics at Johns Hopkins University, following which he joined the instructing staff of Pratt Institute, Brooklyn, N. Y. Here he remained until March, 1906, when Mr. Merrill selected him to take charge of the electrical department of Underwriters' Laboratories.

For six years Mr. Pierce was located at the Chicago office, in charge of the electrical and signaling work, but in 1912 he established the testing station at New York and moved to that point to give it his personal attention, while maintaining direction of the electrical work at Chicago as well. In 1916 he was appointed Vice-President of the Laboratories. For many years Mr. Pierce has been prominent in the electrical work of the National Fire Protection Association and a few years ago was selected as Chairman of the Electrical Committee of the N. F. P. A. This is a most important post, as will be appreciated, when it is remembered that this committee has entire charge of the National Electrical Code.

W. H. Merrill, founder and first President of Underwriters' Laboratories, died in 1923 and the directors elected Mr. Pierce to succeed him. He moved to Chicago in November of that year. Some years later he was elected President of the National Fire Protection Association.

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**Holyoke, Mass., has purchased** a 750-gallon pumper and a tractor for an aerial ladder truck.

**Charles "Sandy" Chapman,** of the Gamewell Company, was the speaker at a recent meeting of the Rotary Club of Amesbury, Mass.

**Deputy Chief Samuel J. Pope,** head of the Fire Prevention Bureau, Boston Fire Department, spoke on "Fire Prevention Inspections," at a meeting of the Norwood Firemen's Relief Association held on December 3 at Norwood, Mass.

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THE CHIMNEY FIRE EXTINGUISHER

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*EASILY and*
*EFFECTIVELY*
PUTS OUT

## CHIMNEY FIRES

Used everywhere by Chiefs who know. Obtain favorable comment for yourself and department by using CHIMFEX.

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CENTRAL RAILWAY SIGNAL CO., INC.
NEWTON, MASS.

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This is what hundreds of firemen say about the

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## FIREMEN'S COAT

It is the only firemen's coat that has the Famous Safety Snap which enables you to fasten and unfasten the coat with one hand. Nothing can catch on this snap accidentally. And it's easy to fasten and release it in cold weather.

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You will be if you wear a BRAXMAR BADGE. Over fifty-five years of experience goes into every badge you buy.

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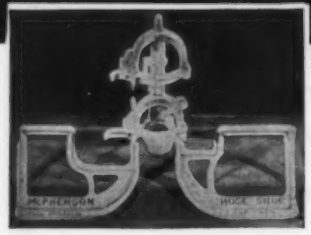

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Wax Treated - Solid Multiple Woven
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Regulation Firemen's Coats are positive protection against rain and snow and act as a wind break as well.

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**Bi-Lateral Fire Hose**

The one hose that does not require frequent replacements. Always reliable for fire service no matter how old, if the jackets are intact.

Lined with three rubber tubes.

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COMFORTABLE AS YOUR OLD FELT HAT; WON'T SHAKE OFF

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## Fairfield "Chiefs' Plan" Discusses 1½-Inch Hose

The advantages contained in the use of 1½-inch hose in fighting small fires, roof and chimney fires and in the avoidance of serious water damage was discussed by the Fairfield County, Conn., Fire Chiefs' Emergency Plan, at its regular monthly meeting held at Fire Headquarters, Southport, Town of Fairfield, on the evening of Thursday, December 20, 1934. The members were welcomed by First Selectman John Ferguson, Fire Commissioner Von Holtz, and Chief Carroll, of Fairfield Township. A letter was received from Secretary Henry F. Drake, of the Mid-Hudson-Harlem Valley Fire Chiefs' Association, thanking the Plan for the gavel presented to that association and inviting members to the next meeting at Pawling, N. Y., on February 2.

Several questions contained in the Question Box were discussed by the members. The first of these was "Has a Certain Amount of 1½-inch Hose been Found of Satisfactory Use in One's Regular Equipment?" This question was very generally discussed, among those who took part being Chiefs Brencher, Burns, Gisborne, Ex-Chief Beckerle, and Captain Dawkins. The opinion was general that the use of 1½-inch hose was a great advantage in incipient fires and in preventing water damage. Chief Gisborne, of Old Greenwich, said that he used a booster line in place of 1½-inch hose with satisfaction. The second question was "What Precautions are Necessary to Prevent Booster Tanks from Freezing?" This was discussed by Chiefs. Carroll, Gisborne, and Captain Dawkins. It was thought possible for the tank to freeze in sub-zero weather, but not probable. To the question "What is the Best Method of Attacking a Fire. in the Second Floor of a Three Story Apartment?" Captain O'Connor, a former member of the New York Fire Department, advised confining the fire to the floor of origin. Get line to floor above, if possible, to prevent fire getting above or below. Chiefs Gisborne and Burns spoke of importance of knowledge of plan of building, and Chief Burns emphasized the need of having ceiling hooks and axes ready.

A question asked by Mr. Meany was on the legal responsibility of the School Board relative to fire risks in schools; whether the State Board of Education, the Fire Chief or the local board is responsible? This was discussed by Chiefs Carroll, Gisborne, Burns, Stapley, Bogardus, Ex-Chief Beckerle, First Selectman Ferguson, and Captain Dawkins. It was suggested that the Chief was responsible for inspection and recommendation and then if the local board did not carry out his findings, they alone were at fault. Captain Dawkins offered to obtain a copy of the New York law on the subject, for the use of the Legislative Committee.

Ex-Chief Beckerle moved that the Plan cooperate with the State Association in efforts to restore pay for the seventh day of service by volunteers. This was carried. Chief Scully spoke on the hazards of oil companies setting up tanks for gasoline along the Connecticut River without protection of foam or otherwise. He asked that the Legislative Committee take the matter up.

A very interesting series of demonstrations were conducted by Mr. Keene, of Aetna Fire Insurance Company, showing how explosions and fires originate from various dust clouds in suspension, and from gasoline and chemical fumes.

On invitation of Chief Gisborne, it was decided to hold the next meeting at Fire Headquarters, Old Greenwich, Conn., on the evening of Wednesday, January 23. Ex-Chief Beckerle, in behalf of Chief McNamara, asked that the April meeting be held at Danbury. Refreshments were served by the local department after the meeting.

## Fire Insurance Classification of Cities

A monograph on "Fire Insurance Classification of Cities and Fire Losses," by Harold A. Stone, has been published by Public Administration Service, Chicago, Ill. It sells for fifty cents a copy.

Mr. Stone, who is one of the authors of "Organization and Operation of a Municipal Bureau of Fire Prevention," has made a study of forty-three American cities having populations of 50,000 and over. He takes issue with the present method of grading cities used by the National Board of Fire Underwriters. In addition to the standard nine factors at present used such as water supply, fire department, fire alarm, police, building laws, hazards, structural conditions, climatic conditions and divergence between the first two factors, he recommends four additional factors: ability to use fire defenses—rating actual performances of the department; fire prevention; moral hazard—the "I-should-worry" attitude of citizens; maintenance of an adequate record of fire losses.

In the report is a classification of 133 cities of over 50,000 population and their points of deficiency as computed by the Standard Grading Schedule.

## More Firemen Asked for Chicago

In his annual report, Chief Marshal Michael J. Corrigan called attention to an acute shortage of firemen. He said:

"There are vacancies in every rank of the department so numerous that the situation is becoming acute. I sincerely trust that the city's financial situation for the coming year will be somewhat enhanced to bring the department's manpower up to the figure we consider necessary for increased efficient operation of the service."

During 1934 the uniformed members have received a fifty-two pay day reduction. The expenditures were further reduced by not filling vacancies nor making promotions.

The department will have an unexpended balance of $55,000 from the appropriations totaling $6,316,730 in the 1934 budget.

Chief Corrigan also commented on the stock yard conflagration. During that fire 100 motor pumping engines operated at full capacity for an average of seventeen hours without a breakdown. In all, 133 pieces of equipment moved through the city streets responding to and returning from the conflagration, without an accident.

## Department Sued for First Aid Injury

The Maywood, Cal., Fire Department has an inhalator and resuscitator and answers first aid calls. The firemen always work under a doctor's directions and if no physician is present when they arrive, a medical man is called at once.

Last January the department was called to assist a woman who was suffering from a heart attack. The woman's husband claimed that his wife's lower extremities were burned by hot water bags which the firemen applied. He brought suit against the city and certain members of the department. The case was tried in the Superior Court. The Court held for the firemen and said:

"It seems to me that members of the Fire Deartment who are called in on an emergency case of this sort appear in about the same relation toward the person to be treated as any neighbor or friend who is called in and asked to do what he can do to help the situation. The service that the Fire Department renders is an emergency service. . . . When they go outside of well-defined duties and respond to such calls as this, their services are gratuitous, and are voluntarily received. . . . I am firmly of the opinion that when any of these men placed those hot water bottles upon Mrs. Reich at the request of the doctor, who was in constant attendance, the entire burden of observation of the patient from that time on was not upon the firemen but upon the doctor. . . . I cannot conceive of an experienced physician delegating to these voluntary helpers the duty and responsibility of watching that patient, to see whether or not she might be burned by the hot water bags."

**An additional fire apparatus** has been recommended for Woodland, Cal., by the local underwriters association.

**Freeport, Ill., has added** a rescue and salvage car. It carries gas masks, inhalator, grappling hooks, first aid kits and similar equipment.

**Squad Car Delivered to Detroit, Mich.**

A squad car has been recently delivered to Detroit, Mich. In the front seat of the car are Chiefs Israel and Rumsey. In the rear are Chiefs Baker, Highland Park; Jaeger, Ecorse; Kuhn, Pontiac; Bender, Saginaw; Mottesheard, Dearborn.

## Westchester Chiefs Discuss Traffic Problems

The subject of traffic problems in relation to the Fire Department was discussed by Dr. Miller McClintock, Director of the Bureau for Street Traffic Research of Harvard University, at the regular meeting of the Fire Chiefs' Emergency Plan, held at Fire Headquarters, Larchmont, N. Y., on the evening of Wednesday, December 19. The members were welcomed by Mayor John Hooley, of Larchmont. A letter of appreciation was read from Chief Donnigan, Elmsford, on the assistance rendered by members of the Plan to the Fire Department of his village in the recent large fire in a wax factory. Later on in the evening Chief Donnigan described the fire, and how it had been fought, following which there was much discussion of the subject.

Dr. McClintock was introduced by Ex-Chief Wooley, of Larchmont, Chairman of the Ways and Means Committee, and spoke at length on the problems of traffic regulation. He predicted that the duties of the Fire Department would in the future be greatly broadened in respect to the saving of life and property; it might even be that it will be called something else, and will enter many fields in the performance of its duties. His bureau had made studies in traffic safety in many cities of the country. He said that many millions of dollars are lost in delays through congestion, which also involves tremendous suffering and renders many unable to support themselves through disablement in accidents. The speaker referred to the serious conditions of traffic in the narrow streets of Boston. He said that while the Fire Department should have the right of way, that care should be taken not to endanger those who were involved in the passage to the fire. In many cities, at crowded intersections, sirens were installed to announce the coming of the fire apparatus. The apparatus should approach the signal light under control and having come to a stop, should pass through a red signal carefully, if no hazard was involved. There was considerable discussion of Dr. McClintock's address.

There was also much attention given to the question of the transportation of dynamite by means of gasoline driven trucks. This was brought up by Chief Chambers, of Yonkers. Chiefs Brennan and Grabb and Judge Hoop discussed the matter. It was decided to leave the matter to a committee to frame an ordinance providing that dynamite could only be transported through the streets in electrically driven or horse-drawn trucks.

On invitation of Chief Chambers, it was decided to hold the next meeting at Fire Headquarters, Yonkers, N. Y., on the evening of Wednesday, January 16. Refreshments were served by the Larchmont Fire Department after the meeting.

## Ex-Chief Mooney of Bridgeport Dead

Edward Mooney, Chief of the Bridgeport, Conn., Fire Department from 1904-1915, died at his home at the age of eighty-four. During his eleven years as head of the department he eliminated the horse-drawn apparatus, changed the personnel from callman to a permanent basis and made other reforms in the service. The last of the horses were retired in 1918.

Chief Mooney was born in Dublin, Ireland, in December, 1850. He came to America with members of his family when he was fourteen years old. After residing in New York City for three years he came to Bridgeport in 1867 and the same year became a member of the volunteer Fire Department.

The volunteer company which he joined was later made a call company. In 1878 he was chosen Captain and he served until 1886. In 1904 he was advanced to Chief. When he retired, he was succeeded by Capt. Daniel E. Johnson.

Upon leaving the department Chief Mooney erected a garage and engaged in the garage business until his recent illness. At one time he served as a member of the Common Council and of the Board of Alderman. He is survived by two daughters.

Chief Thomas F. Burns, present head of the Bridgeport Fire Department said, "He was probably the most courageous fireman I have ever known. His alertness in utilizing each mechanical advancement for fire-fighting purposes established the foundation for our present system."

**The Borough of Homestead, Pa.,** has purchased an Ahrens-Fox pumper.

**Bellmore, L. I., N. Y.,** has opened a new fire station which was erected at a cost of $22,000.

## CORRESPONDENCE

### Experienced Fire Fighters on Ships

*To the Editor:*

Through the courtesy of one of the officials of our Fire Department, your able and timely editorial of November, 1934, has been brought to the writer's attention.

No greater compliment can be paid you, than that your editorial has received marked attention and approval by both fire officials, as well as the public here. To review your editorial would take up much space, but no more space than it deserves. We are pleased to note its effect is already evident. The writer has devoted years to the solution of creating greater safety at sea from fire and other causes, and is pleased to know that the matter is receiving proper consideration and action where it is most appropriate to do so.

I have the honor to be

Sincerely,

CAPTAIN MIDFORD,

Maritime Engineer, 68 Bay Street, South, Hamilton, Can.

### Traffic Lights and Fire Response

*To the Editor:*

Fire apparatus going to a fire should slow down for red traffic lights and then should proceed cautiously with bell and siren operating. If an automobile driver refuses to give the apparatus the right of way, a fireman could be dropped off the apparatus to arrest the driver, and see that he is taken to the police station and given a hearing. For the first offense, the motorist should be fined twenty-five dollars, and an increase of twenty-five dollars for each following offense. Hit the pocket book hard and the public will soon learn to give the Fire Department the right of way. What is more, see that no politician gets the offender released.

If apparatus returning to the station encounters a red traffic light, it should pass the light with caution. Fire apparatus should return to the station as soon as possible because one never knows when there will be another fire call.

We all know that when a company is out on a call, there is another company to take the alarms. But this second company is further away from the calls and it would take that company longer to reach the fire scene. Unless the second company has moved into the first company's house, there is always the added danger of delay by traffic lights.

After all it is a matter of split seconds and not minutes that count in the Fire Department.

Yours truly,

C. B. S.,

Philadelphia, Pa.

## Firemen Start Loan Association

Members of the Waterbury, Conn., Fire Department have formed a credit union under a federal charter. One of the important rules of the newly formed organization is that a member must purchase at least one share at five dollars per share.

With the money received from the share it is planned to create a fund from which members of the Waterbury department who are in need of ready cash may borrow loans up to $100 each. Interest on the loans will be one per cent a month on the unpaid balance and interest paid on shares is expected to be 7 per cent.

This is the first organization of its kind to be formed in Connecticut. The officers of the association are: President, Captain Richard C. Sheehan; Vice-President, Francis N. Bouley; Treasurer, Lieut. Michael Flaherty and Clerk, John F. English.

THOMAS F. MAGNER.

**Chief George Lee,** Royersford, Pa., was elected President of the Keystone Fire Chiefs' Association at a meeting in Chester, Pa., for his fourth term.

**An unusual fire alarm system** has been installed at the De Paul Institute for the Deaf at Brookline, Pa. A number of sirens set up loud and vibrant tones which cause vibrations in the walls and floors of the building and thus warn the deaf occupants.

# A Line of Shut-off Nozzles that WILL NOT LEAK

For a long time every Fire Chief and Master Mechanic has been looking for a Shut-off Nozzle that would not leak. Now the hitherto unattainable has been reached. Buckeye has perfected *a complete line* of simplified, practical nozzles that WILL NOT LEAK. There is a type and size to fit the needs of any department and we will welcome the opportunity to demonstrate them to you.

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**Uniforms** **Shoes**
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**Bunker Coats and Pants**
(with or without detachable lining)

**All Uniforms and House Pants are Made to Measure and UNION MADE**

We are patentees of the detachable feature of firemen's coat which provides a heavy blanket plaid lining (70% wool) which is removable in warm weather. The most satisfactory garment for winter and summer wear. Water-proof bunker pants with detachable lining in same materials.. The outer water-proofed fabric will not absorb water, and ice will not cling to it. Very tough and durable, will turn 10 penny nail. Our garments are the result of years of study and experimentation. Bunking outfits and coats without detachable lining if preferred. We have them all—a complete line for firemen. Write, or wire if you are in the market for immediate delivery or send for catalog showing our complete line. We solicit opportunity of bidding on city orders.

Illustrating Fireman's coat and bunking pants, both with detachable lining.

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DOOR SPRINGS
Complete Automatic Spring Outfits for Doors Opening In and Out. Used throughout the world. Once on the doors your door opening troubles cease. They last a lifetime. Send for Bulletins.

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*Write for the Facts*
EDDY VALVE CO.
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James B. Clow & Sons, Chicago Agents

Valuable Information
All the manufacturers you will find represented in our advertising pages have interesting and valuable data about their equipment which is yours for the asking. When writing, be sure to mention FIRE ENGINEERING.

# FALSE ALARMS

### MORE SCOTCH

Some of the boys on the off-shift were invited up to his house for a little sociable. After the guests had departed, and the dishes were being put away, the husband had words with his wife.

"Of course I'm angry," he said. "One of the guests tells me you and McTavish were in the pantry together."

"Yes, but honest, precious," she answered good naturedly, "we were only kissing—we weren't eating."

---

"I'm afraid to go into that dark room."

"But, dearest, I'm with you."

"That's the trouble."

---

### HOT SEAT

Chief Angelo Cancilla, of Burbank, Cal., reports a one-alarm, the worst in his many years' experience. It caused a total loss. The disastrous fire started in his hip pocket when matches rubbed against his badge.

---

It is rumored that yuletide sledding parties are responsible for many girls being sled astray.

---

### WRONG METHOD

When he finished his tour of duty and went home, he found considerable unrest among his children. He got some of the details from his wife and then he asked his little girl:

"What is this I hear about your little brother being punished by his teacher just because his nose itched?"

"That's right, daddy, but he didn't tell you he was scratching it with his thumb."

---

An intelligent mother is one who knows that while she is Christmas shopping, she must get the children something for their father to play with.

---

### PROPERLY GUARDED

A friendly neighbor asked the Chief, "What is your son in college?"

"Oh, he's a halfback," said the father proudly.

"I mean in his studies."

"Oh! In studies, he's away back."

---

"Just put it on my Bill," sobbed the young widow as she left a floral offering at the cemetery.

---

### DIFFICULT

A few of the boys were discussing things in general and one remarked:

"A fool can ask more questions than a wise man can answer."

"That's true," answered another. "That's why so many flunked the department examination."

---

### BAD LUCK

A village department was contemplating the purchase of an additional motor unit, and it called on the head of a neighboring department for possible advice.

A member of the committee asked: "What model is your car?"

"It isn't a model," answered the officer disgustedly, "It's a horrible example."

---

The old fashioned girl who darned her hubby's socks now has a daughter who socks her darned hubby.

---

### WELL ILLUSTRATED

A new minister came to town. The boys at the fire house in a jovial way induced the spinster who kept the station tidy, to go and hear him preach. After the services the new minister descended from the pulpit to meet his flock.

"How did you like my sermon?" he asked the spinster.

"Splendid," she said. "I never knew what sin was till you came."

---

There were just as many careless drivers a couple of years ago but the horses had more sense.

---

WE OUGHTA GIVE 'EM A SPRAY ER "BOUQUET" FER THAT TREE.
FIRE HOUSE NO SMOKING
HEY, PALS! THE FIREMEN DIDN'T FERGIT US, AFTER ALL!
NEW YEAR PRESENT, FELLERS?

—*Drawing by "Art" Espey*

**The Dogs Around the Fire Station Will Soon Be Up Against It**

## CLASSIFIED ADVERTISING

*Bids Wanted, For Sale and Help Wanted $4 per inch. Position Wanted, $2 per inch. Column width, 1⅝ inches.*

### Superintendent Wanted

Working Superintendent for Fire Engine Factory in Canada. Must have thorough experience in handling men and practical knowledge of building all kinds of Fire Equipment. Some engineering experience desirable. Position Permanent. Write, giving full particulars to Box No. 740, c/o FIRE ENGINEERING, 24 W. 40th Street, New York City. 1-35

### Salesman Wanted

Fire hose Salesman wanted by old reliable manufacturer. State territory you can cover and other details. Address: Box No. 745, c/o FIRE ENGINEERING, 24 W. 40th St., New York.

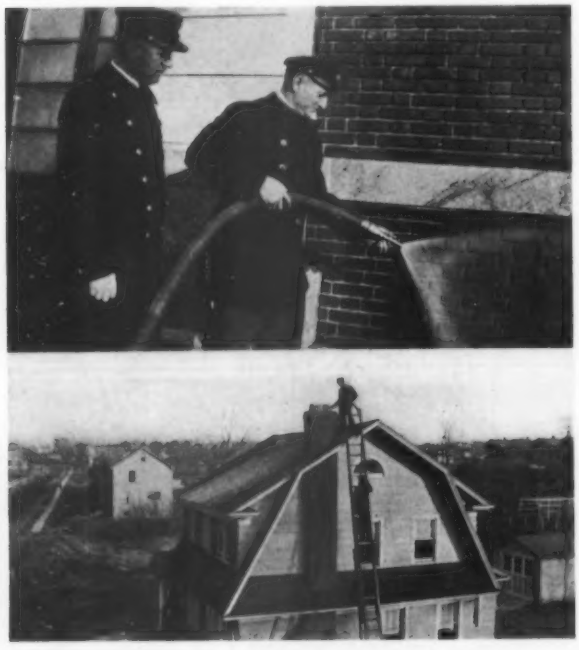
1-2-3


## New Chimney Nozzle

Two members of the New York Fire Department, located in the Borough of Richmond (Staten Island), Frederick Balzer and Conrad Schwall, have devised a very effective nozzle for extinguishing chimney fires. The tip of the nozzle is provided by an ordinary brass lawn spraying nozzle. This nozzle may be regulated to provide a stream spray to ⅜-inch stream. The spray is employed for extinguishing chimney fires, while the ⅛-inch stream it can deliver is used for washing down any sparks which may have fallen on shingle roofs. The following fittings are employed to make up the nozzle, using the lawn spray nozzle as tip:

One and one-half x ¾-inch double female coupling; 1½-inch female to fit standard hose; ¾-inch female pipe thread. Inserted in the ¾-inch female thread is a ¾ x ¾-inch male nipple, which in turn is provided with a ¾-inch pipe thread on one end and a ¾-inch male hose thread on the other.

A copper screen is fitted on the inside of the nozzle to prevent any dirt from entering the nozzle, and thus obstructing the flow of water. When operating at a chimney fire, a 1½-inch line is stretched up a ladder to the chimney and equipped with the nozzle. The nozzle is adjusted to provide a spray and the nozzle is then lowered down the chimney. It completely extinguishes the fire without providing enough water to wash down soot to openings of the chimney within the building, which might cause damage.



**The Balzer-Schwall Chimney Nozzle**

Upper, the nozzle spray such as is used for extinguishing chimney fires. Lower, the nozzle in position, at the end of 1½-inch line of hose, to operate down a chimney or to wet down sparks which may have alighted on shingle roofs.

Incidentally, New York Fire Department charges $5 for extinguishing chimney fires and after a chimney fire is extinguished, the property owner or tenant usually sees to it that the chimney is properly cleaned so that soot will not reignite.

Illustrations herewith show the nozzle delivering a spray and also ready for delivery of spray down a chimney or for wetting down a shingle roof.

## Department and Other Reports Received

**Shanghai, China**—Annual report of the Fire Brigade and Ambulance Service, Shanghai; forty-one pages.

**Milan, Italy**—Statistics of the Corpo Dei Civici Pompieri del Comune di Milano; forty-three pages illustrated.

**Amsterdam, Holland**—Copy of the June, 1934, issue of De Brandweer, an illustrated fire publication.

**Singapore, Malay State**—Annual report of the Fire Department, Singapore; five pages.

**Fitchburg, Mass.**—Annual report of the Fire Department, Fitchburg, Mass.; twenty pages.

**Fire Marshal, British Columbia**—Twelfth annual report of the Fire Marshal, British Columbia, Canada; twenty pages.

**Indianapolis, Ind.**—Report, Division of Fire Prevention, Indianapolis, Ind., for first six months; five typewritten pages.

**Indianapolis, Ind.**—Report of activities of the Indianapolis Fire Department at the State Fair; two typewritten pages.

**Illinois Firemen's Association**—Report of the proceedings of the forty-sixth annual convention, Illinois Firemen's Association, Rockford, Ill., October 17-19; illustrated, 248 pages.

**Southwestern Fire Chiefs**—Souvenir program of the seventh annual convention, Southwestern Association of Fire Chiefs, San Antonio, Tex., June 4-6; illustrated, 96 pages.

## CONVENTION DATES

Jan. 16—FIRE CHIEFS' EMERGENCY PLAN (Westchester County)—Regular Monthly Meeting, Fire Headquarters, Yonkers, N. Y. Secretary, Walter M. Dawkins, 72 Thatcher Street, Harrison, N. Y.

Jan. 23—FIRE CHIEFS' EMERGENCY PLAN OF FAIRFIELD COUNTY, CONN. Regular Monthly Meeting, Fire Headquarters, Old Greenwich, N. Y. Secretary, John Moehring, Toms Road, Stamford, Conn.

Feb. 2—MID-HUDSON-HARLEM VALLEY FIRE CHIEFS' ASSOCIATION. Next Meeting, Fire House, Pawling, N. Y. Secretary, Henry F. Drake, Clinton Volunteer Fire Department, Clinton Corners, N. Y.

April 24—FIRE CHIEFS' EMERGENCY PLAN OF FAIRFIELD COUNTY. Regular Meeting, Danbury, Conn. Secretary, John Moehring, Toms Road, Stamford, Conn.

May 13-17—NATIONAL FIRE PROTECTION ASSOCIATION. 39th Annual Meeting, Atlanta, Ga. Secretary-Treasurer and Managing Director, Franklin H. Wentworth, 60 Batterymarch Street, Boston, Mass.

June 5-6—IOWA ASSOCIATION OF FIRE FIGHTERS. 13th Annual Convention, Davenport, Ia. Secretary-Treasurer, William Hottle, Des Moines, Ia.

June 11-14—ILLINOIS FIRE COLLEGE. 11th Fire College, under auspices of Illinois Firemen's Association. Address, Assistant Chief Roy W. Alsip, Secretary, Illinois Association, Fire Department, Champaign, Ill.

June 19-21—MARYLAND STATE FIREMEN'S ASSOCIATION. 43rd Annual Convention, Oakland, Md. Secretary, George R. Lindsay, Hagerstown, Md.

June 25-27—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. 13th Annual Convention, New Bedford, Mass. Headquarters, Hotel New Bedford; Exhibits, New Bedford Armory. Secretary-Treasurer, Chief John W. O'Hearn, Watertown, Mass.

July—MICHIGAN STATE FIREMEN'S ASSOCIATION. 61st Annual Convention and 7th Annual Fire College, Detroit, Mich., probably in middle of July. Secretary-Treasurer, Statistician and Director, Fire College, Charles V. Lane, Charlotte, Mich.

July 16-17—MARITIME FIRE CHIEFS' ASSOCIATION. 21st Annual Convention, Moncton, N. B. Secretary-Treasurer, Capt. K. J. MacRae, Salvage Corps and Fire Police No. 1, Saint John, N. B.

July 29-Aug. 1—WEST VIRGINIA FIRE SERVICE EXTENSION SCHOOL. 5th Annual School, West Virginia University, Morgantown, W. Va. Address Secretary, W. Va., Fire Chiefs' Ass'n., C. B. Powell, Romney, W. Va., or Prof. Lewis V. Carpenter, Director, at University.

July 30—WEST VIRGINIA FIRE CHIEFS' ASSOCIATION. 4th Annual Meeting, West Virginia University, Morgantown, W. Va. Secretary Chief C. B. Powell, Romney, W. Va.

Sept. 3-6—CALIFORNIA STATE FIREMEN'S ASSOCIATION. 13th Annual Convention, Riverside, Cal. Secretary-Treasurer, H. E. Strasser, 1171 Tenth Ave., San Diego, Cal.

Oct. 1-3—FIREMEN'S ASSOCIATION OF PENNSYLVANIA. 56th Annual Convention, Connellsville, Pa. Secretary, Charles E. Clarke, Wayne, Pa.

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19 Brake Linings
20 Brooms, Fire
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22 Caps, Firemen's
23 Chains, Non-Skid, Fire Apparatus
24 Chassis for Fire Apparatus
25 Chemical Engines and Tanks
26 Chimney Fire Fuses and Compounds
27 City Service Trucks
28 Coats and Suits, Firemen's Quick Hitch
29 Combination Chemical and Hose Cars
30 Cutting and Welding Equipment, Blow Torch
31 Cutting and Welding Equipment, Electric
32 Deluge Sets
33 Door Openers, Fire Station, Automatic
34 Electric Light Plants
35 Extinguishers, Calcium Chloride
36 Extinguishers, Carbon Dioxide
37 Extinguishers, Soda-Acid
38 Extinguishers, Carbon Tetrachloride
39 Extinguishers, Foam
40 Extinguishers, Powder
41 Fire Boat Nozzle Equipment
42 Fire Department Supplies, General
43 Fire Exit Devices, Door Opening
44 Fire Alarm Posts
45 Fire Escapes, Portable
46 Fire Escapes, Rigid
47 First Aid Equipment
48 Flare Lights
49 Flashlights, Hand
50 Flood Lighting Equipment (Lamps, Cable, Reels, etc.)
51 Foam Generating Apparatus
52 Foam Liquid for Extinguishers
53 Gas Masks and Respirators
54 Gas and Smoke Helmets
55 Gas and Smoke Generators
56 Goggles, Firemen's
57 Helmets, Metal, etc.
58 Hose Bridges
59 Hose Carts, Reels and Racks
60 Hose Clamps
61 Hose, Fire
62 Hose, Chemical
63 Hose Holders
64 Hose Jackets
65 Hose Standardization Tools
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67 Hydrants, Fire
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69 Jacks, Shoring and Prying
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71 Lightning Arresters
72 Motorcycles, Fire Dept. Equipped
73 Nets, Life
74 Nozzles, Pipes and Miscellaneous Brass Goods
75 Packings, Pump
76 Pads, Pole Hole
77 Paints, Fire Resisting
78 Priming Ether, Motor
79 Pumping Cars, Standard
80 Pumping Cars, Foam
81 Pumps, Fire Apparatus
82 Pumps, Fire Service, Stationary
83 Pumps, Portable for Fire Protection
84 Record Books, Fire
85 Relief Valves
86 Reviving Apparatus, Oxygen
87 Rubber Clothing
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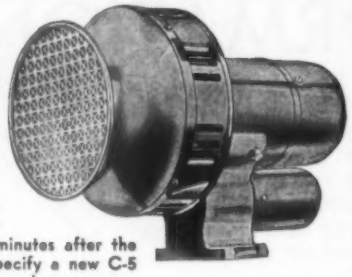

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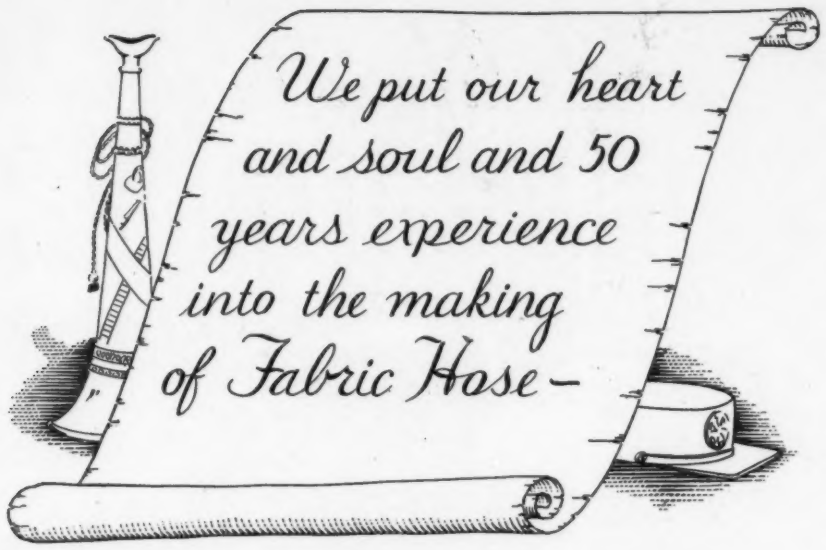


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